No. 17-

IN THE

Supreme Court of the United States

RUSSELL BUCKLEW,

Petitioner,

v.

ANNE PRECYTHE, *et al.*,

Respondents.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Eighth Circuit

PETITION FOR A WRIT OF CERTIORARI

EXECUTION SCHEDULED FOR MARCH 20, 2018

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CAPITAL CASE

QUESTIONS PRESENTED

Should a court evaluating an as-applied challenge to a state's method of execution based on an inmate's rare and severe medical condition assume that medical personnel are competent to manage his condition and that the procedure will go as intended?

Must evidence comparing a state's proposed method of execution with an alternative proposed by an inmate be offered via a single witness, or should a court at summary judgment look to the record as a whole to determine whether a factfinder could conclude that the two methods significantly differ in the risks they pose to the inmate?

Does the Eighth Amendment require an inmate to prove an adequate alternative method of execution when raising an as-applied challenge to the state's proposed method of execution based on his rare and severe medical condition?

PARTIES TO THE PROCEEDING AND RULE 29.6 STATEMENT

Petitioner is Russell Bucklew. Respondents are Anne L. Precythe, David Dormire, and Troy Steele, personnel with the Missouri Department of Corrections. No party is a corporation.

TABLE OF CONTENTS

	Page
QUESTIONS PRESENTED	i
PARTIES TO THE PROCEEDING AND RULE 29.6 STATEMENT	ii
TABLE OF AUTHORITIES	vi
OPINIONS BELOW	1
JURISDICTION	1
CONSTITUTIONAL AND STATUTORY PROVISIONS INVOLVED	1
STATEMENT OF THE CASE	2
I. FACTUAL BACKGROUND	8
A. Bucklew's Rare Medical Condition	8
B. Missouri's Execution Procedure	10
C. The Known Risks Bucklew Faces From Lethal Injection In Missouri	11
D. The Medical Team	13
E. The Lethal Gas Alternative	14
II. PROCEEDINGS BELOW	15
A. Procedural History And Discovery	15
B. The Lower Court Decisions	18
REASONS FOR GRANTING THE PETITION	20
I. THIS CASE PRESENTS URGENT QUESTIONS REGARDING LITIGATION OF AS-APPLIED CHALLENGES TO A METHOD OF EXECUTION	21

TABLE OF CONTENTS—continued

Page

A. Whether Courts Evaluating An As-Applied Method-Of-Execution Claim Should Assume That Medical Personnel Are Competent To Handle An Inmate's Rare And Severe Medical Condition, And That The Execution Will Go As Intended, Warrants Review 21

B. Whether The Evidence Comparing The Risks Of Proposed Methods Of Execution Must Come From A Single Witness Warrants Review 26

C. Whether An Inmate Raising An As-Applied Challenge To A Method Of Execution Must Prove An Available Alternative Method That Will Substantially Reduce His Risk Of Suffering Also Warrants Review 29

II. THIS CASE IS A STRONG VEHICLE FOR ADDRESSING THESE ISSUES 32

CONCLUSION 33

APPENDICES

APPENDIX A: *Bucklew v. Precythe*, No. 17-3052 (8th Cir. Mar. 15, 2018)..... 1a

APPENDIX B: *Bucklew v. Precythe*, No. 17-3052, 2018 WL 1163360 (8th Cir. Mar. 6, 2018)..... 3a

APPENDIX C: *Bucklew v. Lombardi*, No. 14-8000-CV-W-BP (W.D. Mo. June 15, 2017)..... 26a

APPENDIX D: *Bucklew v. Lombardi*, No. 14-8000-CV-W-BP (W.D. Mo. Aug. 21, 2017) 39a

TABLE OF CONTENTS—continued

Page

APPENDIX E: *Bucklew v. Lombardi*, No. 14-8000-CV-W-BP (W.D. Mo. Aug. 11, 2017) 44a

APPENDIX F: *Bucklew v. Lombardi*, No. 14-8000-CV-W-BP (W.D. Mo. Apr. 11, 2017)..... 53a

APPENDIX G: *Bucklew v. Lombardi*, No. 14-2163 (8th Cir. Mar. 6, 2015)..... 72a

APPENDIX H: Affidavit of Alana Boyles 89a

APPENDIX I: Hamm Expert Report 91a

APPENDIX J: Zivot Supplemental Report..... 106a

APPENDIX K: Medical Summary 144a

APPENDIX L: Missouri Execution Protocol..... 145a

TABLE OF AUTHORITIES

CASES Page

Anderson v. Dep't of Transp., FAA, 827 F.2d 1564 (Fed. Cir. 1987) 28
Arthur v. Dunn, 137 S. Ct. 725 (2017) 7, 31
Baze v. Rees, 553 U.S. 35 (2008) ..... *passim*
Bucklew v. Lombardi, No. 14-1800-CV-W-BP, 2014 WL 2736014 (W.D. Mo. May 9, 2014), *rev'd*, 565 F. App'x 562 (8th Cir. 2014) 16
Bucklew v. Lombardi, 565 F. App'x 562 (8th Cir. 2014), *vacated on rehearing* (May 20, 2014) 16
Bucklew v. Lombardi, 134 S. Ct. 2333 (2014) 16
In re Campbell, 874 F.3d 454 (6th Cir. 2017) 7
Correll v. State, 184 So. 3d 478 (Fla. 2015) .. 7
DG&G, Inc. v. FlexSol Packaging Corp. of Pompano Beach, 576 F.3d 820 (8th Cir. 2009) 28
Dixon v. Penn Cent. Co., 481 F.2d 833 (6th Cir. 1973) 28
Estelle v. Gamble, 429 U.S. 97 (1976) 5, 22
Ford v. Wainwright, 477 U.S. 399 (1986) 7, 31
Gissendaner v. Comm'r, Ga. Dep't of Corr., 803 F.3d 565 (11th Cir. 2015) 7
Glossip v. Gross, 135 S. Ct. 2726 (2015) 3, 6, 23, 30
Hall v. Florida, 134 S. Ct. 1986 (2014) 31
Hamm v. Dunn, 138 S. Ct. 828 (2018) 5, 25
Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574 (1986) 6, 28
Moore v. Texas, 137 S. Ct. 1039 (2017) 31
Ricci v. DeStefano, 557 U.S. 557 (2009) 6, 28

TABLE OF AUTHORITIES—continued

Page

Ringo v. Lombardi, No. 09-4095-BP (W.D. Mo. filed May 17, 2009) 17
Trademark Props., Inc. v. A&E TV Networks, 422 F. App'x 199 (4th Cir. 2011) 28
United States v. Boone, 279 F.3d 163 (3d Cir. 2002) 28
United States v. Candie, 974 F.2d 61 (8th Cir. 1992) 28
United States v. Clevenger, 733 F.2d 1356 (9th Cir. 1984) 28
United States v. Crowder, 543 F.2d 312 (D.C. Cir. 1976) 28
United States v. Gonzalez-Velez, 587 F.3d 494 (1st Cir. 2009) 28
United States v. Merida, 765 F.2d 1205 (5th Cir. 1985) 28
United States v. Norman, 776 F.3d 67 (2d Cir. 2015) 28
United States v. Prince, 883 F.2d 953 (11th Cir. 1989) 28
United States v. Ransom, 691 F. App'x 504 (10th Cir. 2017) 28
United States v. Rollins, 544 F.3d 820 (7th Cir. 2008) 28
Zink v. Lombardi, No. 12-4209-BP (W.D. Mo. filed Aug. 1, 2012) 15, 17

CONSTITUTION AND STATUTE

U.S. Const. amend. VIII 1
Mo. Stat. Ann. § 546.720.1 ..... 1, 10

TABLE OF AUTHORITIES—continued

OTHER AUTHORITIES

Page

AMA Code of Medical Ethics (2016), https://www.ama-assn.org/sites/default/files/media-browser/code-of-medical-ethics-chapter-9.pdf 31

Minhua Wang, MD et al., *Cavernous Hemangioma of the Uvula: Report a Rare Case with Literature Review*, 8 N. Am. J. of Med. & Sci. 56 (2015) 8

PETITION FOR A WRIT OF CERTIORARI

Russell Bucklew petitions for a writ of certiorari to review the decision of the Eighth Circuit.

OPINIONS BELOW

The opinion of the Eighth Circuit is reported at — F.3d —, No. 17-3052, 2018 WL 1163360 (8th Cir. Mar. 6, 2018) and is reproduced in the appendix to this petition at Pet. App. 3a–25a. The opinion of the district court is not reported and is reproduced at Pet. App. 26a–38a.

JURISDICTION

The Western District of Missouri had jurisdiction over Bucklew's Section 1983 claim pursuant to 28 U.S.C. § 1343. The Eighth Circuit had jurisdiction pursuant to 28 U.S.C. § 1292(a)(1).

The Eighth Circuit entered judgment on March 6, 2018, Pet. App. 3a, and denied Mr. Bucklew's petition for panel rehearing or rehearing *en banc* on March 15, 2018, Pet. App. 1a–2a. This Court has jurisdiction under 28 U.S.C. § 1254(1).

CONSTITUTIONAL AND STATUTORY PROVISIONS INVOLVED

The Eighth Amendment of the U.S. Constitution provides that "[e]xcessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted." U.S. Const. amend. VIII.

Missouri's death penalty statute, Mo. Stat. Ann. § 546.720.1, provides in relevant part:

> The manner of inflicting the punishment of death shall be by the administration of lethal gas

> or by means of the administration of lethal injection. And for such purpose the director of the department of corrections is hereby authorized and directed to provide a suitable and efficient room or place, enclosed from public view, within the walls of a correctional facility of the department of corrections, and the necessary appliances for carrying into execution the death penalty by means of the administration of lethal gas or by means of the administration of lethal injection.

STATEMENT OF THE CASE

Russell Bucklew is scheduled to be executed on March 20 by a method that is very likely to cause him needless suffering. Neither the district court nor the court of appeals denies that. Bucklew's very likely suffering stems from an exceedingly rare disease called cavernous hemangioma. The disease is progressive, and has caused unstable, blood-filled tumors to grow in his head, neck, and throat. Those highly sensitive tumors easily rupture and bleed. The tumor in his throat often blocks his airway, requiring frequent, conscious attention from Bucklew to avoid suffocation. His peripheral veins are also compromised. That means that the lethal drug cannot be administered in the ordinary way, through intravenous access in his arms. An expert who examined Bucklew concluded that while undergoing Missouri's lethal injection protocol, Bucklew is "highly likely to experience ... the excruciating pain of prolonged suffocation resulting from the complete obstruction of his airway." Pet. App. 109a ¶ III.E. As he struggles to breathe through the execution procedure, Bucklew's throat tumor will likely rupture. "The resultant hemorrhaging will further impede Mr. Bucklew's airway by filling his mouth and airway with blood, causing him to choke and cough on his own blood dur-

ing the lethal injection process." *Id.* ¶ III.F. Bucklew's execution will very likely be gruesome and painful far beyond the pain inherent in the process of an ordinary lethal injection execution.

In a 2-1 decision, a panel of the Eighth Circuit concluded that this execution is not cruel and unusual solely because, in its view, Bucklew failed to prove that his alternative method would substantially reduce his risk of needless suffering. (The full Eighth Circuit denied rehearing *en banc*, with 4 judges dissenting.) That ruling is based on three distinct misreadings and dangerous extensions of this Court's decisions in *Baze v. Rees*, 553 U.S. 35 (2008) (plurality opinion), and *Glossip v. Gross*, 135 S. Ct. 2726 (2015).

First, the panel believed that when evaluating the risks posed by the state's method of execution in light of an inmate's rare and complicating medical condition, *Glossip* and *Baze* require courts to assume that state personnel are competent to deal with the condition and that all will go as intended. Pet. App. 17a. Nothing in *Glossip* or *Baze* warrants such an assumption. And such a rule makes no sense in an as-applied challenge. The whole point of such a challenge is that a generally lawful method of execution, when applied to someone with a particular medical condition, will very likely involve needless suffering. The claim does not assert that state officials, when they designed the protocol, *intended* to make the inmate suffer needlessly. When drawing up the protocol, state officials surely did not think about an inmate with cavernous hemangioma in the throat plus compromised veins. Nor does the claim assert that an "isolated mishap" in implementing the protocol might produce harm that does not qualify as cruel within the meaning of the Eighth Amendment. *Baze*, 553 U.S. at 50 (plurality opinion). The claim asserts

that *following* the protocol will, in light of the inmate's medical condition, very likely produce needless suffering.

The issue arises here in the context of a discovery dispute. The Eighth Circuit approved the district court's decision to close off discovery into whether the medical professionals charged with administering the execution have the training and knowledge to handle the known complications that will arise in light of Bucklew's rare medical condition. The medical team has the authority under Missouri's execution protocol to make discretionary judgments about how to attempt venous access and other details directly relevant to Bucklew's risk of suffering. Bucklew sought such discovery (allowing for necessary safeguards to preserve the anonymity of the medical personnel involved) to establish how the skill and expertise of the medical team will impact the known risks of suffering that his condition creates. But he was denied any access to the medical personnel and thereby foreclosed from presenting to the court the full extent of his risks. The Eighth Circuit agreed that foreclosing discovery was proper because the court had to assume "that the procedure will go as intended." Pet. App. 17a.

Such an assumption is at odds with this Court's decisions. The plurality opinion in *Baze* specifically stated that a claim asserting a known, "objectively intolerable risk of harm" is, unlike a claim based on the prospect of a mere mistake, cognizable as a challenge to a method of execution under the Eighth Amendment. 553 U.S. at 50 (plurality opinion) (quoting *Farmer v. Brennan*, 511 U.S. 825, 846 (1994)). The Eighth Circuit's ruling here prevents an inmate from proving such a claim.

In so doing, it authorizes what amounts to "deliberate indifference" to an inmate's needless suffering. *Estelle v. Gamble*, 429 U.S. 97, 104-06 (1976) (deliberate indifference to inmate's medical condition violates the Eighth Amendment). As detailed below, the record establishes that Missouri's execution medical team will be unaware of petitioner's condition and will take steps that will cause petitioner to experience needless pain and a prolonged sense of suffocation. The record already establishes that the execution will *not* go as intended. As Justice Ginsburg recently noted, in advance of the botched execution of Doyle Lee Hamm, there is no substitute for adversarial testing of the skills and qualifications of the state's medical team to handle problems that we already know will arise. *Hamm v. Dunn*, 138 S. Ct. 828 (2018) (Ginsburg, J., dissenting). To assume that all will go as intended is to altogether assume away as-applied challenges to methods of execution. This Court should accept review to clarify how inmates can prove the risks they face when raising an as-applied challenge to a method of execution.

Second, the Eighth Circuit understood *Glossip* to impose a novel burden at summary judgment in a method-of-execution case that is at odds with summary judgment law. As Judge Colloton's dissent makes clear, a reasonable factfinder could conclude on this record that a lethal gas protocol proposed by Bucklew will substantially reduce Bucklew's suffering. Pet. App. 22a. Bucklew's expert opined that Bucklew will very likely experience a sense of suffocation for several minutes under the lethal injection protocol. Respondents' expert opined that Bucklew would likely experience a sense of suffocation for merely 20–30 seconds if lethal gas was used. The panel majority refused to accept this as evidence

comparing the two methods because no single witness said one method would be better than the other. *Id.* at 14a. That is, the panel believed *Glossip* not only requires an as-applied challenge to present evidence comparing the state's method with an alternative, but the evidence must come in the form of a single witness who believes one method is significantly better than the other.

That is not and should not be the law. The question is not whether any one *witness* compared and distinguished the risks of lethal injection with the risks of lethal gas but, as Judge Colloton observed, whether there is evidence in the *record* that distinguishes between the two. Pet. App. 22a. Judge Colloton's view follows logically from this Court's repeated statements that evidence at summary judgment is evaluated in light of the record as a whole. *Ricci v. DeStefano*, 557 U.S. 557, 586 (2009); *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986). The panel majority read *Glossip* to change that rule exclusively for method-of-execution claims. Nothing in *Glossip* suggests such a unique procedural burden is appropriate. And allowing it to stand would cripple many method-of-execution claims because experts for an inmate will often labor under ethical obligations that preclude them from designing a "better" way to kill someone.

Third, petitioner respectfully submits that this Court should not require inmates raising an as-applied challenge to their methods of execution to design an alternative "that is 'feasible, readily implemented, and in fact significantly reduce[s] a substantial risk of severe pain.'" *Glossip*, 135 S. Ct. at 2737 (quoting *Baze*, 553 U.S. at 52). The Court imposed that burden on inmates in cases raising facial challenges to their methods of execution. The Eighth Cir-

cuit (in a 6-4 *en banc* ruling) and the Eleventh Circuit have imposed that burden on inmates raising as-applied challenges to their methods of execution, and the Sixth Circuit (in a *habeas* case) suggested such a burden exists. Pet. App. 85a–88a; *Gissendaner v. Comm'r, Ga. Dep't of Corr.*, 803 F.3d 565 (11th Cir. 2015) (per curiam); *In re Campbell*, 874 F.3d 454 (6th Cir. 2017) (per curiam). The Florida Supreme Court has done so as well. *Correll v. State*, 184 So. 3d 478 (Fla. 2015) (per curiam). Several judges dissented in these cases. The reasons for imposing such a burden in a case presenting a facial challenge do not and should not apply to inmates presenting an as-applied challenge based on an exceedingly rare medical condition. This Court should accept review here and clarify that inmates presenting an as-applied challenge need not custom-design their own method of execution in light of the idiosyncratic reasons the state's generally lawful method of execution will prove cruel as applied to them.

This Court is well aware of the number of attempted but failed executions that have not gone according to plan. *See Arthur v. Dunn*, 137 S. Ct. 725, 733 (2017) (Mem.) (Sotomayor, J., dissenting). Some of the problems that have arisen in the past and produced excruciating and gruesome results are, as here, predictable. Only this Court can establish uniform national standards that will reduce the frequency of these horrible events. In doing so, this Court would not only protect the irreducible human dignity of the inmates bringing such claims. It would also protect the essential dignity of the society that administers the death penalty. The Eighth Amendment protects "the dignity of society itself from ... barbarity." *Ford v. Wainwright*, 477 U.S. 399, 410 (1986). We refuse to punish with cruelty to protect ourselves against

being party to cruelty. We do so even when the temptation is powerful because the crime we are punishing was itself barbaric and cruel, as respondents will no doubt detail in their opposition. The wisdom of the Eighth Amendment is that it recognizes the temptation to be indifferent to the needless suffering of those society condemns, and demands we resist it. A society that tolerates stripping any man of his irreducible dignity, even one who merits the ultimate punishment, takes a fateful step. This Court is uniquely positioned to defend this sacred value. And it should do so in this case.

I. FACTUAL BACKGROUND

In 1998, Bucklew was convicted of first degree murder, kidnapping, burglary, forcible rape, and armed criminal action. He was sentenced to death. He does not challenge the validity of his conviction or death sentence.

A. Bucklew's Rare Medical Condition

Bucklew suffers from an exceedingly rare medical condition—cavernous hemangioma—that causes inoperable, blood-filled tumors to grow in his throat and around his face, head, and neck. Pet. App. 6a. Cavernous hemangiomas occur in only .2% of the general population, and cavernous hemangiomas in the oral cavity (affecting the lips, tongue, and palate) are prevalent in less than 1% of those who have cavernous hemangioma (only .002% of the general population). Minhua Wang, MD et al., *Cavernous Hemangioma of the Uvula: Report a Rare Case with Literature Review*, 8 N. Am. J. of Med. & Sci. 56 (2015). A case like Bucklew's, involving the uvula, is "extremely rare." *Id.* at 56.

Bucklew's tumors are extremely sensitive and susceptible to rupture. Pet. App. 6a. Merely touching

his airway can cause the delicate tissue of his airway and uvula to leak blood. Pet. App. 111a ¶ V.A.1–4, 113a ¶ V.B.8. Bucklew's condition is progressive; his tumors continue to grow, and his risk of experiencing a catastrophic hemorrhage increases. *Id.* at 113a–114a ¶ V.B.10; APP0324 at 48:6–24; APP0328.[1] In May 2014, Bucklew's medical expert, Dr. Zivot, examined him and determined that his condition had significantly progressed to the extent that his tumors posed an imminent risk of life-threatening hemorrhage. *See* APP0186–87.

Bucklew's "grossly enlarged uvula" partially obstructs his airway, making it difficult for him to breathe and causing him to choke and bleed. Pet. App. 112a ¶ V.B.1–3. On the Mallampati classification, a scale used to describe how difficult it is to secure a patient's airway in a medical setting, Bucklew's airway rates a "Class IV," meaning that his airway is "very difficult." Indeed, when Bucklew was put under general anesthesia during previous surgeries, he underwent a tracheotomy to ensure that his airway would remain secure during the procedures. *Id.* at 108a ¶ III.B, 110a ¶ IV.B–C. Bucklew's difficulty breathing is exacerbated when he lies supine, and, to prevent suffocation, he must consciously monitor and mechanically adjust his breathing to shift his uvula and permit airflow. Indeed, Bucklew sleeps on his side and upright to avoid choking and hemorrhaging, and yet still experiences frequent hemorrhages severe enough that he typically needs to clean blood off his face in the morning. *Id.* at 112a ¶ V.B.1–2.

Bucklew also has compromised peripheral veins in his hands and arms, which make his veins difficult to

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[1] APP citations are from the Appendix to Brief, *Bucklew v. Lombardi*, No. 14-3052 (8th Cir. filed Dec. 1, 2017).

visualize. Pet. App. 6a. Accordingly, it would likely take multiple attempts to set an intravenous (IV) line, and setting an IV in Bucklew's arms likely will not be possible at all. *Id.* at 114a–115a ¶VI.E; *see also* APP0346 at 77:3–21.

B. Missouri's Execution Procedure

Missouri law authorizes execution by both lethal gas and lethal injection. Mo. Stat. Ann. § 546.720.1. Missouri has a written execution procedure for lethal injection only. Nonetheless, respondents have conceded that lethal gas is a feasible and readily implemented alternative to lethal injection in Missouri. Pet. App. 13a.

The medical technicians responsible for the execution, who have been designated "M2" and "M3" to preserve their anonymity, have substantial discretion in the execution chamber. APP0341–42 at 43:11–44:22. Under the execution protocol, medical personnel determine the most appropriate locations for IV lines to inject the lethal drug. The protocol authorizes accessing the vein via a central line, such as the femoral vein, but only if the medical personnel involved in the execution "have appropriate training, education, and experience for that procedure." Pet. App. 145a.

Not all state medical personnel, and indeed not all anesthesiologists, are qualified or skilled at performing a central line procedure. APP0347 at 81:22–24; APP0362 at 237:11–19. In the past, after failing to gain peripheral vein access, the medical members of the execution team have employed an outdated procedure known as a "cut-down" in the leg. APP0311–12 at 55:12–56:17. (A cut-down involves slicing into the leg to visualize the vein; it is extremely painful. *See* APP0350 at 92:23–93:13.) Both Dr. Zivot, Buck-

lew's medical expert, and Dr. Antognini, respondents' medical expert, agree that a "cut-down" is not the current preferred method of establishing central line access. APP0352 at 98:8–23; APP0374 at 71:12–16.

After the medical team gains venous access, a non-medical member of the execution team will inject the lethal drug, during which time Bucklew will lose the ability to consciously manage his airway. Pet. App. 145a–146a; *id.* at 115a–116a ¶ VI.I–J.

C. The Known Risks Bucklew Faces From Lethal Injection In Missouri

Bucklew's execution will not go smoothly. He faces identifiable severe risks from the procedure both *before* and *after* the medical team gains venous access and the non-medical team begins to administer the lethal drug.

As noted above, attempts to access Bucklew's peripheral veins will very likely fail. Pet. App. 114a–115a ¶ VI.E; *see also* APP0346 at 77:3–21. But it is very likely that medical personnel will try, and repeatedly so. Pet. App. 114a–115a ¶ VI.E; APP0352 at 99:7–20. The discomfort of repeated failed efforts to gain venous access will increase Bucklew's stress, raising the pace of his breathing and blood pressure, increasing the risk that his sensitive tumors will rupture. Pet. App. 115a ¶ VI.G.

Eventually, the medical team will stop trying to gain peripheral access, and will turn to a central line, likely the femoral vein. To access the femoral vein, the record indicates that M3 will perform a cut-down procedure; that is what M3 has done in the past when attempts at peripheral access failed. APP309 at 28:11-22; APP311-12 at 55:20-56:3. During a cut-down, Bucklew will have to lie flat, at least while the medical team attempts to access his femoral vein,

and possibly throughout the remainder of the execution. *Id.* at 29a; *id.* at 21a & n.5. He will gag on his tumor, causing him to struggle and convulse in an effort to breathe. *Id.* at 115a ¶ VI.H, 116a ¶ VI.L. His convulsions will increase the risks associated with the attempt to gain access through the femoral vein. Among the risks of attempting femoral vein access is piercing the femoral artery. APP0350 at 90:3–92:22. That risk was recently made especially vivid during the failed execution of Doyle Lee Hamm in Alabama on February 22, 2018. Even though Alabama certified that it would use personnel qualified to access the femoral vein, the medical team punctured Hamm's artery. Pet. App. 98a. That execution had to be abandoned. If, as is likely, Bucklew is violently struggling to breathe while the team attempts femoral access, his risk of a similar failure increases.

The painful cut-down procedure and struggles to breathe will further increase the stress of the execution and further increase the likelihood of Bucklew rupturing his tumor. There is a significant likelihood that Bucklew will be choking on his tumor and gagging on his own blood for the (unknown) duration of the cut-down procedure, before the injection of the lethal drug even begins. Pet. App. 115a ¶ VI.G; APP0352 at 100:1–12.

After the lethal drug begins to flow, Bucklew will soon lose the ability to manage his airway. This is true whether he remains laying flat or whether he is upright or anything in between. Pet. App. 115a–116a ¶ VI.I. He will begin to experience a sense of suffocation and the extreme pain associated with suffocation. *Id.* at 28a–29a. In the unlikely event he has not already begun choking on his own blood as a result of struggling while lying flat throughout the cut-down procedure, the violence of his choking as he slips into

unconsciousness will likely cause his tumors to rupture and lead him to aspirate his own blood. *Id.* at 116a ¶ VI.M).

The parties disagree over how long Bucklew will be unable to manage his airway while remaining aware of the sense of suffocation. Bucklew's expert opines that Bucklew could be in this state for between 52 and 240 seconds, while respondents' expert opines that he would be conscious of suffocation for 20 to 30 seconds. Pet. App. 29a. These estimates are on top of any period of time Bucklew is suffocating prior to the administration of the lethal drug.

D. The Medical Team

Any judgments concerning how to handle an inability to gain venous access, an inmate choking, gagging, or hemorrhaging blood, or any of the other predictable complications arising from Bucklew's condition are left to the sole discretion of the medical members of the execution team. APP0339–40 at 36:11–37:9; APP0299–300 at 93:11–96:9. Nothing in the record suggests they will be anticipating what Bucklew will likely experience.

The medical personnel who perform the execution will not be provided any information concerning Bucklew's medical condition beyond a single-page document summarizing his medical history. In 2014, as Missouri prepared to execute Bucklew, a one-page form summarizing Bucklew's medical issues was prepared. Pet. App. 144a. As relevant here, it reported his cavernous hemangioma, but only with respect to his jaw and upper lip. It said *nothing* about his compromised veins, and *nothing* about the tumor in his throat that will inhibit his breathing during the execution and will very likely rupture and cause him to choke on his blood. Indeed, whoever prepared the

form shockingly reported "No" in response to the question "Does the offender have Asthma, bronchitis, or *any other breathing problem*?" *Id.* (emphasis added). The medical team will not be provided with any other medical records, including the MRI images that reveal the size of the tumors in Bucklew's airway. APP0292 at 43:20–44:6.

Missouri has never executed an inmate who suffers from cavernous hemangioma, APP0448 at Resp. No. 4, and there is no reason to believe that the medical members of the execution team have ever seen a patient with cavernous hemangioma, or have ever seen one with tumors in his throat. Even if they are alerted to the *fact* of the disease by the medical form, there is no reason to believe they will be alert to the rare tumor in Bucklew's throat and the special suffocation risk it creates.

E. The Lethal Gas Alternative

Bucklew has proposed death by nitrogen hypoxia as an alternative method of execution. APP0085–87. Lethal gas requires no venous access at all. So, all the risks posed by the difficulties of gaining venous access, including the painful cut-down procedure, would vanish. Likewise, lethal gas can be administered while Bucklew is seated upright, so all the risks of struggling to breathe and choking on the blood flowing from his throat tumor while lying flat during the cut-down procedure would also vanish. APP0547; APP0898–99.

Dr. Antognini opined that, if administered correctly, lethal gas would lead to a quick death. APP0362 at 234:12-21. Specifically, he testified that inhalation of nitrogen gas "would quickly achieve hypoxia and cause an inmate to become quickly unconscious" within about 20 to 30 seconds of breathing pure ni-

trogen. APP0362 at 234:12–21. In addition, there is reason to believe that breathing 100% nitrogen does not produce a sense of suffocation. The sense of suffocation is caused by a buildup of carbon dioxide in the blood when a person is unable to expel air. APP0899. If one breathes in pure nitrogen while expelling air, death is caused by an absence of oxygen unaccompanied by a sense of suffocation. APP0899; APP0911. Reports of high altitude pilots who lost consciousness while breathing air low in oxygen and high in nitrogen is consistent with this view. APP0547.

Dr. Zivot did not opine on whether lethal gas would result in significantly less suffering than Missouri's lethal injection protocol because he is ethically barred from proposing a method of execution at all. Pet. App. 108a ¶ II.B. So, no evidence in the record disputes respondents' expert's view that death by lethal gas would be substantially quicker and less painful than Bucklew's expert's view of the likely suffering that lethal injection will cause Bucklew.

II. PROCEEDINGS BELOW

A. Procedural History And Discovery

In a Fourth Amended Complaint filed on October 13, 2015, Bucklew challenged the constitutionality of Missouri's execution protocol as applied to him. Among other things, he alleged that Missouri's lethal injection protocol "presents a substantial risk of causing excruciating or tortuous pain and inflicting needless suffering" and therefore violates the Eighth Amendment's prohibition on cruel and unusual punishment.[2] APP0136-37 ¶¶ 148, 151. He further al-

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[2] Bucklew was also party to an earlier case styled *Zink v. Lombardi*, No. 12-04209-BP (W.D. Mo. filed Aug. 1, 2012), in

leged that his "blood-filled tumors are prone to rupture under stress or any rise in blood pressure. When this occurs, Mr. Bucklew bleeds through his facial orifices and in his throat, further obstructing his airway and causing him to choke." APP0086. Bucklew alleged that "the risks arising from Mr. Bucklew's airway are even greater if he is lying flat." APP0119 ¶ 102. Bucklew's initial complaint was filed on May 9, 2014, and on May 14, 2014, Bucklew moved for a stay of his execution, then scheduled for May 21, 2014, to provide adequate time to litigate his claims. The district court denied Bucklew's motion for a stay, and dismissed his complaint, *sua sponte*. *Bucklew v. Lombardi*, No. 14-1800-CV-W-BP, 2014 WL 2736014 (W.D. Mo. May 9, 2014).

With only two days remaining until his scheduled execution, Bucklew immediately appealed the dismissal of his complaint. An Eighth Circuit panel granted a stay. *Bucklew v. Lombardi*, 565 F. App'x 562, 569–71 (8th Cir. 2014). After the Eighth Circuit, sitting *en banc*, vacated the stay on the same day, this Court entered a stay of execution pending Bucklew's appeal. *Bucklew v. Lombardi*, 134 S. Ct. 2333 (2014) (Mem.).

Roughly ten months later, the *en banc* Eighth Circuit reversed the dismissal of Bucklew's Complaint and remanded for further proceedings. Pet. App. 72a–88a. The full Eighth Circuit, split 6–4, rejected Bucklew's argument that he need not propose an alternative method of execution because he raised an as-applied challenge only. *Id.* at 75a, 84a. On remand, Bucklew amended his complaint to assert that lethal gas is a "feasible and available alternative

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which he and other inmates raised a facial challenge to Missouri's lethal injection execution protocol.

method that will significantly reduce the risk of severe pain." APP0137 ¶ 150.

Discovery began and Bucklew sought, among other things, information about the skills and training of M2 and M3 to handle the risks that his rare condition would likely present. APP0224–26. Bucklew indicated that identifying information in any documents produced concerning M2 and M3 could be redacted. APP0224–25. The district court refused to allow Bucklew any access to the medical team and any information regarding their skills and training. Pet. App. 44a–52a.

After additional discovery revealed the extent of discretionary authority granted to M2 and M3 during an execution, Bucklew filed a Motion to Compel outlining the need for discovery concerning the training and qualifications of M2 and M3. The district court again denied Bucklew access to this discovery. Pet. App. 57a, 71a.

M2 and M3 have been deposed in prior capital litigation, specifically in 2010 in *Ringo v. Lombardi*, No. 09-4095-BP (W.D. Mo. filed May 17, 2009), and in 2013 and 2014 in *Zink v. Lombardi*, No. 12-4209-BP (W.D. Mo. filed Aug. 1, 2012). Bucklew's appointed counsel, Ms. Pilate, represented Bucklew in those proceedings (which raised facial challenges, not as-applied challenges to Missouri's execution protocol), and she believes that the contents of those depositions are directly relevant to disputed factual issues in this case. APP0278. The district court, however, refused to permit Ms. Pilate to share the deposition transcripts with Sidley Austin or to use the transcripts in connection with this case. APP0285–86.

B. The Lower Court Decisions

The district court granted respondents summary judgment on June 15, 2017. The district court assumed that the record demonstrated "a substantial risk that [Bucklew] will experience choking and an inability to breathe for up to four minutes." Pet. App. 34a. The court also noted that "Defendants do not argue that [Bucklew's proposed alternative] method of execution is not feasible or readily implemented." *Id.* However, the district court concluded that the record did not present a triable dispute concerning whether execution by nitrogen gas would significantly reduce Bucklew's risk of needless suffering, as compared to Missouri's lethal injection protocol. *Id.* at 35a. The district court also denied a motion to reconsider. *Id.* at 39a–43a.

On November 21, 2017, while Bucklew's appeal was pending and before the parties had fully briefed the issues, at the state's urging, the Missouri Supreme Court reset Bucklew's execution date to March 20, 2018. Shortly thereafter, the Eighth Circuit set the appeal for argument on February 2, 2018.

On March 6, 2018, a divided panel of the Eighth Circuit affirmed the district court. The panel majority concluded that Bucklew provided no evidence proving that lethal gas would substantially reduce his risk of severe pain. It acknowledged evidence from Bucklew's expert that lethal injection would cause him to experience a sense of suffocation for several minutes. Pet. App. 14a. It also acknowledged that it was undisputed that lethal gas would cause him to experience a sense of suffocation for, at most, 20–30 seconds. *Id.* And it nowhere disputed that the difference would be significant enough to warrant relief. Instead, the panel declared that Bucklew's claim failed because the evidence showing a difference be-

tween the two methods had not come from any one witness. *Id.* That is, the panel interpreted this Court's requirement of "comparative" evidence to mean that an inmate must point to a single witness who does the comparison. *Id.*

Judge Colloton dissented. In surveying the evidence and interpreting it in the light most favorable to Bucklew, Judge Colloton concluded: "If the fact-finder accepted Dr. Zivot's testimony as to the effect of pentobarbital, and Dr. Antognini's uncontroverted testimony as to the effect of nitrogen gas, then Bucklew's proposed alternative method would significantly reduce the substantial risk of severe pain ...." Pet. App. 22a. Judge Colloton observed that the general rule allows the trier of fact to accept all or just a part of any witness' testimony, and that on summary judgment one party can rely on a portion of the opposing party's expert's testimony to create a genuine issue of material fact. *Id.* Accordingly, Judge Colloton would have remanded the case to the district court to hold a trial and make factual findings.

The panel majority also affirmed the district court's denial of any discovery into the qualifications of the medical personnel who will participate in Bucklew's execution. The panel majority, interpreting Bucklew's argument as resting on the "premise that M2 and M3 may not be qualified for the positions for which they have been hired," refused to "assume that Missouri employs personnel who are incompetent or unqualified" or to permit discovery into "[t]he potentiality that something may go wrong in an execution." Pet. App. 17a. Instead, the panel majority insisted that the court's analysis must be based on the assumption "that those responsible for carrying out the sentence are competent and qualified to do so, and that the procedure will go as intended." *Id.*

Three days after the decision, Bucklew petitioned for a panel rehearing or rehearing *en banc*, and moved for an emergency stay. In opposing the stay request, Respondents submitted a new factual affidavit from Alana Boyles, which stated that, during Bucklew's execution, "the Department will adjust the gurney so that Mr. Bucklew is not lying fully supine at the time the Department administers the lethal chemicals." Pet. App. 89a. The affidavit was prepared *after* the Eighth Circuit panel had already issued its decision, and was thus submitted without any opportunity for Bucklew to investigate Ms. Boyle's role in the execution protocol or her authority to make decisions concerning how that protocol will be applied to Bucklew. The affidavit made no representations about how Bucklew would be positioned *prior* to the time the Department administers the lethal chemicals, including during a cut-down procedure.

On March 15, 2018, the Eighth Circuit declined to rehear Mr. Bucklew's appeal. Pet. App. 1a.

REASONS FOR GRANTING THE PETITION

This case presents an opportunity to resolve three important questions arising out of the Eighth Circuit's misinterpretation of this Court's decisions in method-of-execution cases. First, this Court can confirm that courts evaluating an as-applied challenge to a state's method of execution should not assume that an execution will go as intended for an inmate with a rare and severe medical condition, and should allow discovery into the training and skills of relevant medical personnel. Second, this Court can reaffirm that the traditional summary judgment standard applies in challenges to methods of execution, and that an inmate need not present a single witness to provide

comparative evidence distinguishing the state's method of execution from the inmate's proposed alternative. Third, this Court can declare that inmates need not propose an alternative execution procedure when raising an *as-applied* challenge to a state's method of execution. These questions are critical to the fairness of procedures for inmates facing execution protocols that, as applied to them, pose known and severe risks of needless suffering.

I. THIS CASE PRESENTS URGENT QUESTIONS REGARDING LITIGATION OF AS-APPLIED CHALLENGES TO A METHOD OF EXECUTION.

A. Whether Courts Evaluating An As-Applied Method-Of-Execution Claim Should Assume That Medical Personnel Are Competent To Handle An Inmate's Rare And Severe Medical Condition, And That The Execution Will Go As Intended, Warrants Review.

The Eighth Circuit affirmed the denial of discovery into the training and qualifications of the medical personnel who will make critical decisions affecting the length and severity of Bucklew's suffering during the execution. It did so because it concluded that the training and qualifications of the medical team are irrelevant. It ruled that a court evaluating an inmate's as-applied challenge under *Baze* and *Glossip* "must ... assum[e] that those responsible for carrying out the sentence are competent and qualified to do so, and that the procedure will go as intended." Pet. App. 17a. A challenge to a method of execution based on the inmate's medical condition necessarily asserts that the procedure will *not* go as intended. If such claims are cognizable at all, the Eighth Circuit's rule cannot stand.

This Court has already indicated that such claims are cognizable. The plurality opinion in *Baze* acknowledged the possibility that some executions might entail an "objectively intolerable risk of harm that officials may not ignore." *Baze*, 553 U.S. at 50 (plurality opinion) (internal quotation marks omitted). Nothing in *Glossip* undermines that view. And for good reason. The rule follows logically from this Court's longstanding view that "deliberate indifference" to an inmate's medical condition can rise to the level of cruel and unusual punishment within the meaning of the Eighth Amendment. *Gamble*, 429 U.S. at 104. Here, medical personnel charged with administering Missouri's execution protocol on an inmate with a rare and severe medical condition will be ignorant of material details about that condition, yet empowered to make critical decisions during the procedure that will increase the inmate's suffering. Respondents refuse even to provide access to those medical professionals for discovery. All of this evinces deliberate indifference to Bucklew's condition and the risks that lethal injection poses to him.

Importantly, Bucklew does not claim, as the Eighth Circuit suggested, that "M2 and M3 may not be qualified for the positions for which they have been hired." Pet. App. 17a. Bucklew presently has no reason to believe they lack the qualifications to do what the execution protocol demands: "prepare the lethal chemicals," "determine the most appropriate locations for intravenous (IV) lines," "monitor the prisoner during the execution," among other things. *Id.* at 145a–146a ¶¶ B, C.1, D.2. But the execution protocol also empowers the medical team to attempt to access the femoral vein "provided they have appropriate training, education, and experience for that procedure." *Id.* at 145a ¶ C.1. That is, the execution protocol does

not assume the training and experience of the medical team members to handle one of the procedures that the experts agree will likely be required here: obtaining access to the femoral vein. *Assuming* that medical team members will do so and all will go "as intended," as the Eighth Circuit has done here, is not only contrary to law, but is contrary to the protocol itself.

The execution protocol at issue here is nothing like the protocols this Court had before it in *Baze* and *Glossip*. Both of those protocols included "several important safeguards," *Baze*, 553 U.S. at 55 (plurality opinion), to protect against the possibility of error in administering the drugs. Indeed, Oklahoma's standards considered in *Glossip*, adopted after the horrific execution of Clayton Lockett, included "detailed provisions with respect to the training and preparation of the execution team." 135 S. Ct. at 2735. Not only does Missouri's protocol lack any details regarding the training and preparation of the execution team, but Bucklew was wrongfully denied the chance to fill that critical gap through discovery.

That denial is all the more egregious in light of the testimony that makes clear how much discretionary authority medical team members have during the execution. Anne Precythe, who as Director of Corrections is nominally in charge, repeatedly stated during her deposition that she knows nothing about Bucklew's medical condition and would defer to M2 and M3 regarding how to handle any issues that arise during the execution. APP0338–40 at 35:12–37:9; APP0341–42 at 43:11–44:22. This includes not only the decision whether to attempt venous access through a central line like the femoral vein, but also how many attempts will be made on peripheral veins, and what procedure will be used to attempt femoral

vein access. It also includes how to position Bucklew during attempts to gain venous access and beyond. *See* Pet. App. 20a–21a & n.5.

Under Missouri's vague procedures, and Precythe's deference to medical team members, the risk of trying and failing to gain venous access through a peripheral vein, and then likely attempting access through the outdated cut-down procedure that medical personnel previously performed, is not the prospect of a mere "isolated mishap," as the Eighth Circuit supposed. Pet. App. 17a (quoting *Baze*, 553 U.S. at 50). This risk is all but certain. It will lengthen the execution procedure. It will increase the stress of the procedure on Bucklew, which increases the risk that his tumors will rupture and he will begin to bleed from them, likely gagging on his own blood even *before* the lethal drug can be administered. *Id.* at 114a–115a ¶ VI.E–G, 109a ¶ III.F. Convulsing uncontrollably during a cut-down procedure surely increases the risk that the femoral artery will be punctured, or that the IV line will be positioned so that the lethal drug leaks into neighboring tissue, causing intense pain.

Even though we know these risks are substantial, we have no reason to believe medical team members will be alert to them. There is no reason to believe M2 or M3 have ever seen a patient with cavernous hemangioma, or have ever seen one with tumors in his throat. There is reason to believe that neither M2 nor M3 will be alerted to Bucklew's compromised veins, the tumor in Bucklew's throat, or the nature and extent of the risk of suffocation Bucklew faces. The single page form previously prepared in anticipation of an earlier execution date for Bucklew failed to report any of these known problems. Pet. App. 144a.

Respondents tacitly conceded that the record inadequately supports their assurances that all will go smoothly by submitting, at the rehearing stage in the Eighth Circuit, a new affidavit of a new witness purporting to provide minimal (and inadequate) assurance that Bucklew will not be "fully supine at the time the Department administers the lethal chemicals." Pet. App. 89a. The affidavit makes no representation about Bucklew's position during the painful cut-down procedure he will endure. There remains every reason to believe Bucklew will be forced to lie "fully supine" during that procedure, which necessarily occurs before the lethal chemicals are administered. Bucklew had no opportunity to investigate Ms. Boyles' role in the execution protocol or her authority to make decisions concerning how that protocol will be applied to Bucklew. And the respondents' gesture reflects their mistaken insistence that Bucklew's risk of suffocating is present only when "fully supine." That is wrong. *Id.* at 115a–116a ¶ VI.I–J); *id.* at 20a. In the end, the affidavit only underscores respondents' deliberate indifference to the full range of risks Bucklew faces. It illustrates why "[a]n adversarial process should ... test[] the risk of 'serious illness and needless suffering.'" *Hamm*, 138 S. Ct. at 828–29 (Ginsburg, J., dissenting).

That adversarial process can include safeguards to protect the anonymity of execution team members. Bucklew has never asserted otherwise. *See, e.g.*, APP0224–25 at IV.I.1.3. Indeed, such safeguards have been used in the past when similar discovery was *allowed*. The fact that the court barred Ms. Pilate, who has seen that discovery and believes it is relevant here, from using it in this case, dramatically demonstrates the fundamental unfairness of the discovery ruling. This Court's review is warranted.

B. Whether The Evidence Comparing The Risks Of Proposed Methods Of Execution Must Come From A Single Witness Warrants Review.

The Eighth Circuit has ruled that an inmate raising an as-applied challenge to a method of execution must plead and prove that a feasible and readily available alternative method of execution would substantially reduce his risk of needless suffering. Pet. App. 75a, 84a. For the reasons discussed below, Bucklew maintains that ruling was error. But even assuming that is correct, the Eighth Circuit has layered an additional evidentiary burden on inmates challenging a state's proposed method of execution. According to the panel majority, and over the dissent of Judge Colloton, the Eighth Circuit now requires inmates to present a single witness who compares the risks posed by the two methods of execution and who concludes that the inmate's proposal substantially reduces the risks posed by the state's method. *Id.* at 13a–14a. This novel evidentiary standard, at odds with settled summary judgment law, warrants review.

What the parties' experts concluded is clear regarding the risks Bucklew faces *after* the lethal drug is administered. Bucklew's expert (Dr. Zivot) opines that Bucklew will experience a sense of suffocation for several minutes if lethal injection is used. Respondents' expert (Dr. Antognini) thinks Bucklew will experience a sense of suffocation for 20-30 seconds if lethal injection is used. Dr. Zivot did not opine on how long Bucklew would experience pain if executed by lethal gas. Dr. Antognini opined that lethal gas would leave Bucklew insensate to pain within 20-30 seconds.

The Eighth Circuit panel majority correctly stated Bucklew's argument: "the district court should have compared Dr. Zivot's opinion [about lethal injection] with Dr. Antognini's testimony [about lethal gas.]" Pet. App. 14a. Judge Colloton, in dissent, did just that: "If the factfinder accepted Dr. Zivot's testimony as to the effect of pentobarbital, and Dr. Antognini's uncontroverted testimony as to effect of nitrogen gas, then Bucklew's proposed alternative method would significantly reduce the substantial risk of severe pain ...." *Id.* at 22a. The panel majority does not deny that the difference between experiencing suffocation for 20-30 *seconds*, and experiencing suffocation for several *minutes*, is significant and would warrant relief. Instead, it refused to compare Dr. Zivot's opinion about lethal injection with Dr. Antognini's opinion about lethal gas. Put simply, the panel majority rejected Bucklew's argument because "his expert" did not compare the two methods himself. *Id.* at 13a–14a.[3]

This was legal error. *Glossip* requires a comparison between the state's method and a petitioner's alternative method. But it nowhere requires that a single witness compare the two. As Judge Colloton explained, a witness's testimony may be credited in whole or in part, and a plaintiff may rely on the defendant's evidence, including the defendant's expert witness, if that evidence is helpful. Pet. App. 22a (cit-

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[3] The panel majority also erroneously stated Bucklew's concern about suffocation "rests on" whether he will be forced to lie supine. Pet. App. 15a. In fact, Dr. Zivot notes that Bucklew's choking is worse when lying flat. *Id.* at 112a ¶ V.B.1–2). Dr. Zivot also clearly stated that once Bucklew loses full consciousness, he will be unable to manage his airway and will choke. *Id.* at 115a–116a ¶ VI.I.

ing cases). Petitioner is aware of no federal court of appeals that has ruled to the contrary.[4]

The panel majority provided no citation for its novel rule. The previously unquestioned rule of law relied upon by Judge Colloton follows logically from the standard for summary judgment: only when "the record taken as a whole" creates no genuine issue of material fact should a court enter summary judgment. *Ricci*, 557 U.S. at 586; *Matsushita*, 475 U.S. at 587. Evidence is evidence, whether proffered by the party seeking or opposing summary judgment. At summary judgment, a party may rely upon an opponent's expert to support or defeat the motion. *DG&G, Inc. v. FlexSol Packaging Corp. of Pompano Beach*, 576 F.3d 820, 826-27 (8th Cir. 2009). There is and should be no special burden placed on inmates under sentence of death challenging a method of execution in light of a rare medical condition. The panel majority misread *Glossip* and improperly imposed a proffer-all-the-comparative-evidence-yourself rule on Bucklew.

Indeed, it is especially inappropriate to impose this special burden in an as-applied method of execution

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[4] Every Circuit agrees with Judge Colloton. *United States v. Gonzalez-Velez*, 587 F.3d 494, 504 (1st Cir. 2009); *United States v. Norman*, 776 F.3d 67, 78 (2d Cir. 2015); *United States v. Boone*, 279 F.3d 163, 189 (3d Cir. 2002); *Trademark Props., Inc. v. A&E TV Networks*, 422 F. App'x 199, 212 (4th Cir. 2011); *United States v. Merida*, 765 F.2d 1205, 1220 (5th Cir. 1985); *Dixon v. Penn Cent. Co.*, 481 F.2d 833, 837 (6th Cir. 1973); *United States v. Rollins*, 544 F.3d 820, 836 (7th Cir. 2008); *United States v. Candie*, 974 F.2d 61, 65 (8th Cir. 1992); *United States v. Clevenger*, 733 F.2d 1356, 1359 (9th Cir. 1984); *United States v. Ransom*, 691 F. App'x 504, 506 (10th Cir. 2017); *United States v. Prince*, 883 F.2d 953, 959 n.3 (11th Cir. 1989); *United States v. Crowder*, 543 F.2d 312, 326 (D.C. Cir. 1976) (en banc); *Anderson v. Dep't of Transp., FAA.*, 827 F.2d 1564, 1570 (Fed. Cir. 1987) (per curiam).

case. Dr. Zivot explained why he could not opine on a method of execution that would result in significantly less suffering than the lethal injection protocol proposed by the State: he is ethically barred from proposing a method of execution at all. Pet. App. 108a ¶ II.B. The law should not require an inmate to find an expert who is willing to violate his or her oath by custom-designing a method of execution that will substantially reduce the inmate's idiosyncratic reasons for excessive suffering.

This Court should grant this petition and restore the generally applicable rules for evaluating evidence at summary judgment to inmates bringing an as-applied challenge to their methods of execution.

C. Whether An Inmate Raising An As-Applied Challenge To A Method Of Execution Must Prove An Available Alternative Method That Will Substantially Reduce His Risk Of Suffering Also Warrants Review.

The Eighth Circuit requires an inmate raising an as-applied, method-of-execution challenge to propose a "feasible, readily implemented alternative procedure that will *significantly* reduce a substantial risk of severe pain and that the State refuses to adopt." Pet. App. 84a. Its 6-4 *en banc* ruling on this issue mis-applied a rule announced in cases raising facial challenges to the critically different context of an as-applied challenge. The extension of the rule to as-applied challenges, also adopted by the Eleventh Circuit, the Florida Supreme Court, and suggested by the Sixth Circuit, is unwarranted. The reasons justifying the alternative method requirement are linked with the character of facial challenges.

Both *Baze* and *Glossip* start from the premise that because the Constitution permits capital punishment, it must also permit a method of carrying out the death sentence. *Baze*, 553 U.S. at 48–49 (plurality opinion); *Glossip*, 135 S. Ct. at 2739. The implications for that premise are broader when the Court is considering a facial challenge than when it is considering an as-applied challenge.

A facial challenge asks the Court to declare a method of execution unconstitutional for use against anyone. Such a challenge runs the risk of being a disguised effort to render the death penalty itself unconstitutional. *See Glossip*, 135 S. Ct. at 2739. But that risk is not present at all when the inmate raises an as-applied challenge. Such a claim implicates the lawfulness of the state's method for no other inmate. Bucklew's claim is rooted in his idiosyncratic medical condition and the risks posed specifically to him. He does not seek a judgment that would require Missouri to alter its execution protocol as to any other inmate. Nothing about his claim even implicitly questions the lawfulness of capital punishment.

And nothing about Bucklew's claim seeks to "transform courts into boards of inquiry charged with determining 'best practices' for executions." *Baze*, 553 U.S. at 51 (plurality opinion). Because only Bucklew's execution is at stake, his claim does not ask the courts to displace state officials from their task as designers of a state's protocol for carrying out capital punishment. State legislatures would continue to evaluate the best scientific evidence available to approve the most humane methods of execution. *Id.* Courts would remain focused on a task for which they are well suited: evaluating whether a general state rule (the state's execution protocol) applied to particular facts (the medical condition of the inmate) satis-

fies the Constitution's legal standard (the Eighth Amendment's prohibition of cruelty).

Practical considerations also weigh in favor of relieving inmates with rare, complicating medical conditions from having to design their own execution protocol. State officials naturally have a firmer grasp of the modifications to a protocol that the state can accommodate. State officials will also have greater experience with the complications that can arise during executions, and thus will have better knowledge of what practices are likely to provide relief, at least in circumstances that can recur. And inmates will often be frustrated in their efforts to obtain expert guidance in custom-designing a method of execution that accounts for their particular medical issues. Most professionals with medical training are barred by ethical standards from "participating in" an execution, which includes a bar on designing a method of execution that is "better" than the one proposed by the state. *See, e.g.*, *AMA Code of Medical Ethics*, tit. 9.7.3 "Capital Punishment" (2016), https://www.ama-assn.org/sites/default/files/media-browser/code-of-medical-ethics-chapter-9.pdf.

This Court has already ruled that certain individuals, based on their mental health, are categorically ineligible for the death penalty. *Ford*, 477 U.S. at 410 (plurality opinion) ("The Eighth Amendment prohibits the State from inflicting the penalty of death upon a prisoner who is insane."); *Moore v. Texas*, 137 S. Ct. 1039, 1048 (2017) (holding that individuals with certain mental deficiencies cannot be constitutionally executed); *Hall v. Florida*, 134 S. Ct. 1986, 1992 (2014) ("[P]ersons with intellectual disability may not be executed."). It should not be surprising, then, that the Eighth Amendment prohibits the execution of *some* individuals by a *particular*

method based on their physical condition. That is all Bucklew asserts here. Bucklew's physical condition should not condemn him to state indifference to his suffering, even if Bucklew is unable to design an alternative that convincingly shows the promise of substantially reduced suffering. Rather, his proof that his idiosyncratic condition means the state will impose unconstitutional suffering on him should lead to a court order preventing the state from doing so. The law should not "bar a death-row inmate from vindicating a right guaranteed by the Eighth Amendment .... even if [he] can prove that the State plans to kill him in an intolerably cruel manner." *Arthur*, 137 S. Ct. at 729 (Mem.) (Sotomayor, J., dissenting). Such a judgment would leave Missouri free to design a lethal gas protocol that meets Eighth Amendment standards.

II. THIS CASE IS A STRONG VEHICLE FOR ADDRESSING THESE ISSUES.

This case is on direct appeal from final judgment. The Eighth Circuit's decision adopts novel rules of law that frustrate method-of-execution claims. The issues are cleanly presented.

Throughout this litigation, respondents have persistently suggested otherwise. They have asserted that Bucklew failed to plead his claim, and that his claim is barred by *res judicata* and the statute of limitations because he could have and should have brought his claim earlier, in a proceeding that raised a facial challenge. No judge has agreed with respondents. Judge Colloton thoroughly and accurately rejected their arguments. Bucklew need not repeat t ose reasons in full here. But, in brief: (1) Bucklew specifically pleaded that lethal injection would cause him to experience a prolonged sense of suffocation, and (2) Bucklew was repeatedly *denied* the resources

to investigate the severity of the risks he faced from lethal injection in light of his condition, and did not learn the facts necessary to assert his claim until it was too late to include his as-applied challenge in the case raising a facial challenge to lethal injection.

CONCLUSION

For the foregoing reasons, the Court should grant the petition for a writ of certiorari.

Respectfully submitted,

/s/ Robert N. Hochman

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March 15, 2018

No. 17-

IN THE

Supreme Court of the United States

RUSSELL BUCKLEW,

Petitioner,

v.

ANNE PRECYTHE, *et al.*,

Respondents.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Eighth Circuit

PETITION APPENDIX

EXECUTION SCHEDULED FOR MARCH 20, 2018

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March 15, 2018

TABLE OF CONTENTS

Page

APPENDIX A: *Bucklew v. Precythe*, No. 17-3052 (8th Cir. Mar. 15, 2018) 1a

APPENDIX B: *Bucklew v. Precythe*, No. 17-3052, 2018 WL 1163360 (8th Cir. Mar. 6, 2018) 3a

APPENDIX C: *Bucklew v. Lombardi*, No. 14-8000-CV-W-BP (W.D. Mo. June 15, 2017) 26a

APPENDIX D: *Bucklew v. Lombardi*, No. 14-8000-CV-W-BP (W.D. Mo. Aug. 21, 2017) 39a

APPENDIX E: *Bucklew v. Lombardi*, No. 14-8000-CV-W-BP (W.D. Mo. Aug. 11, 2017) 44a

APPENDIX F: *Bucklew v. Lombardi*, No. 14-8000-CV-W-BP (W.D. Mo. Apr. 11, 2017) 53a

APPENDIX G: *Bucklew v. Lombardi*, No. 14-2163 (8th Cir. Mar. 6, 2015) 72a

APPENDIX H: Affidavit of Alana Boyles 89a

APPENDIX I: Hamm Expert Report 91a

APPENDIX J: Zivot Supplemental Report 106a

APPENDIX K: Medial Summary 144a

APPENDIX L: Missouri Execution Protocol 145a

UNITED STATES COURT OF APPEALS
FOR THE EIGHTH CIRCUIT

No: 17-3052

Russell Bucklew

Appellant

v.

Anne L. Precythe, Director of the Department of Corrections, et al.

Appellees

Appeal from U.S. District Court for the Western District of Missouri - Kansas City
(4:14-cv-8000-BP)

ORDER

Before SMITH, Chief Judge, WOLLMAN, LOKEN, COLLOTON, GRUENDER, SHEPHERD, KELLY, ERICKSON, GRASZ and STRAS, Circuit Judges.

Appellant Bucklew's petition for rehearing by panel is denied. Judge Colloton would grant the petition for rehearing by panel.

Appellant Bucklew's petition for rehearing en banc has been considered by the court and the petition is denied. Chief Judge Smith and Judge Kelly would grant the petition. Judge Colloton and Judge Gruender would grant rehearing en banc on Point I of the petition for rehearing en banc.

Judge Duane Benton took no part in the consideration or decision of the petition for rehearing en banc.

KELLY, Circuit Judge, dissenting from the denial of the petition for rehearing en banc.

I would grant Russell Bucklew's petition for rehearing en banc—and reverse the district court's grant of summary judgment—for the reasons stated in the dissent from the panel opinion

in this case. See Bucklew v. Precythe, ___ F.3d ___, 2018 WL 1163360, at *7 (8th Cir. 2018) (Colloton, J., dissenting). I would also grant Bucklew's petition to the extent it seeks reconsideration of this court's conclusion, in Bucklew v. Lombardi, 783 F.3d 1120, 1128 (8th Cir. 2015) (en banc), that those sentenced to death must plead a "feasible, readily implemented alternative procedure" for carrying out their sentence in order to state a plausible as-applied claim under the Eighth Amendment. I continue to believe that "[f]acial and as-applied challenges to execution protocols are different," that death row inmates "need not plead a readily available alternative method of execution" to bring an as-applied challenge, and that "[a] state cannot be excused from taking into account a particular inmate's existing physical disability or health condition when assessing the propriety of its execution method." See id. at 1129 (Bye, J., concurring in the result). "While the Supreme Court has been clear on the general proposition that, so long as a state-imposed death penalty is constitutional, there must be some way for states to carry out executions, the Supreme Court has also been clear that some individuals cannot be executed." Id. at 1130 (collecting cases); see also Madison v. Alabama, 138 S. Ct. ___, 2018 WL 514241 (Feb. 26, 2018); Dunn v. Madison, 138 S. Ct. 9, 12 (2017) (Ginsburg, J., concurring). In my view, neither Glossip v. Gross, 135 S. Ct. 2726 (2015), nor any subsequent case from the United States Supreme Court dictates the result this court reached on this issue in Bucklew v. Lombardi, 783 F.3d 1120 (8th Cir. 2015) (en banc).

March 15, 2018

Order Entered at the Direction of the Court:
Clerk, U.S. Court of Appeals, Eighth Circuit.

/s/ Michael E. Gans

United States Court of Appeals
For the Eighth Circuit

No. 17-3052

Russell Bucklew

Plaintiff - Appellant

v.

Anne L. Precythe, Director of the Department of Corrections, et al.

Defendants - Appellees

Appeal from United States District Court
for the Western District of Missouri - Kansas City

Submitted: February 2, 2018
Filed: March 6, 2018

Before WOLLMAN, LOKEN, and COLLOTON, Circuit Judges.

LOKEN, Circuit Judge

The issue is whether the Eighth and Fourteenth Amendments, as applied, bar Missouri officials from employing a procedure that is authorized by Missouri statute to execute Russell Bucklew.

In March 2006, Bucklew stole a car; armed himself with pistols, handcuffs, and a roll of duct tape; and followed his former girlfriend, Stephanie Ray, to the home of

Appellate Case: 17-3052 Page: 1 Date Filed: 03/06/2018 Entry ID: 4636271

Michael Sanders, where she was living. Bucklew knocked and entered the trailer with a pistol in each hand when Sanders's son opened the door. Sanders took the children to the back room and grabbed a shotgun. Bucklew began shooting. Two bullets struck Sanders, one piercing his chest. Bucklew fired at Sanders's six-year-old son, but missed. As Sanders bled to death, Bucklew struck Ray in the face with a pistol, handcuffed Ray, dragged her to the stolen car, drove away, and raped Ray in the back seat of the car. He was apprehended by the highway patrol after a gunfight in which Bucklew and a trooper were wounded.

A Missouri state court jury convicted Bucklew of murder, kidnaping, and rape. The trial court sentenced Bucklew to death, as the jury had recommended. His conviction and sentence were affirmed on direct appeal. State v. Bucklew, 973 S.W.2d 83 (Mo. banc 1998). The trial court denied his petition for post-conviction relief, and the Supreme Court of Missouri again affirmed. Bucklew v. State, 38 S.W.3d 395 (Mo. banc 2001). We subsequently affirmed the district court's denial of Bucklew's petition for a federal writ of habeas corpus. Bucklew v. Luebbers, 436 F.3d 1010 (8th Cir. 2006). The Supreme Court of Missouri issued a writ of execution for May 21, 2014. Bucklew filed this action under 42 U.S.C. § 1983, alleging that execution by Missouri's lethal injection protocol, authorized by statute, would constitute cruel and unusual punishment in violation of the Eighth and Fourteenth Amendments as applied to him because of his unique medical condition. Bucklew appeals the district court's[1] grant of summary judgment in favor of the state defendants because Bucklew failed to present adequate evidence to establish his claim under the governing standard established by the Supreme Court in Baze v. Rees, 553 U.S. 35 (2008), and Glossip v. Gross, 135 S. Ct. 2726 (2015). Reviewing the grant of summary judgment *de novo*, we affirm.

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[1]The Honorable Beth Phillips, United States District Judge for the Western District of Missouri.

I.

Missouri's method of execution is by injection of a lethal dose of the drug pentobarbital. Two days before his scheduled execution in 2014, the district court denied Bucklew's motion for a stay of execution and dismissed this as-applied action *sua sponte*. On appeal, a divided panel granted a stay of execution, Bucklew v. Lombardi, 565 Fed. Appx. 562 (8th Cir. 2014); the court en banc vacated the stay. Bucklew applied to the Supreme Court for a stay of execution, and the Court issued an Order granting his application "for stay pending appeal in the Eighth Circuit." This court, acting en banc, reversed the *sua sponte* dismissal of Bucklew's as-applied Eighth Amendment claim and remanded to the district court for further proceedings. Bucklew v. Lombardi, 783 F.3d 1120, 1128 (8th Cir. 2015) ("Bucklew I"). On the same day, the en banc court affirmed the district court's dismissal on the merits of a facial challenge to Missouri's lethal injection protocol filed by several inmates sentenced to death, including Bucklew. Zink v. Lombardi, 783 F.3d 1089, 1114 (8th Cir.), cert denied, 135 S. Ct. 2941 (2015).[2]

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[2]"The doctrine of res judicata or claim preclusion bars relitigation of a § 1983 claim if the prior judgment was a final judgment on the merits rendered by a court of competent jurisdiction, and if the same cause of action and the same parties or their privies were involved." Baker v. Chisom, 501 F.3d 920, 925 (8th Cir. 2007), cert denied, 554 U.S. 902 (2008). As Bucklew was a plaintiff in Zink, any facial challenge to the current method of execution in this case is precluded. Defendants argue that Bucklew's as-applied challenge is also precluded because it could have been raised in Zink. See Brown v. St. Louis Police Dep't, 691 F.2d 393, 396 (8th Cir. 1982). Like the district court, we decline to address this complex issue. See Bucklew I, 783 F.3d at 1122 n.1; cf. Whole Woman's Health v. Hellerstedt, 136 S. Ct 2292, 2305 (2016). We likewise decline to address defendants' claim that Bucklew's as-applied challenge is barred by the applicable statute of limitations. See Boyd v. Warden, Holman Corr. Facility, 856 F.3d 853, 874-76 (11th Cir. 2017).

Our decision in Bucklew I set forth in considerable detail the allegations in Bucklew's as-applied complaint regarding his medical condition. 783 F.3d at 1124-26. Bucklew has long suffered from a congenital condition called cavernous hemangioma, which causes clumps of weak, malformed blood vessels and tumors to grow in his face, head, neck, and throat. The large, inoperable tumors fill with blood, periodically rupture, and partially obstruct his airway. In addition, the condition affects his circulatory system, and he has compromised peripheral veins in his hands and arms. In his motion for a stay of execution in Bucklew I, Bucklew argued:

> Dr. Joel Zivot, a board-certified anesthesiologist . . . concluded after reviewing Mr. Bucklew's medical records that a substantial risk existed that, because of Mr. Bucklew's vascular malformation, the lethal drug will likely not circulate as intended, creating a substantial risk of a "prolonged and extremely painful execution." Dr. Zivot also concluded that a very substantial risk existed that Mr. Bucklew would hemorrhage during the execution, potentially choking on his own blood -- a risk greatly heightened by Mr. Bucklew's partially obstructed airway.
>
> * * * * *
>
> [The Department of Corrections has advised it would not use a dye in flushing the intravenous line because Dr. Zivot warned that might cause a spike in Bucklew's blood pressure.] Reactionary changes at the eleventh hour, without the guidance of imaging or tests, create a substantial risk to Mr. Bucklew, who suffers from a complex and severe medical condition *that has compromised his veins*.
>
> * * * * *
>
> The DOC seems to acknowledge they agree with Dr. Zivot that Mr. Bucklew's obstructed airway presents substantial risks of needless pain and suffering, but what they plan to do about it is a mystery. Will they execute Mr. Bucklew in a seated position? . . . The DOC should be required to disclose how it plans to execute Mr. Bucklew so that this Court can properly assess whether additional risks are present. . . . Until

> Mr. Bucklew knows what protocol the DOC will use to kill him, and until the DOC is required to conduct the necessary imaging and testing to quantify the expansion of Mr. Bucklew's hemangiomas and the extent of his airway obstruction, it is not possible to execute him without substantial risk of severe pain and needless suffering.

Defendants' Suggestions in Opposition argued that Bucklew's "proposed changes . . . with the exception of his complaint about [dye], which Missouri will not use in Bucklew's execution, are not really changes in the method of execution."

Glossip and Baze established two requirements for an Eighth Amendment challenge to a method of execution. First, the challenger must "establish that the method presents a risk that is *sure or very likely* to cause serious illness and needless suffering, and give rise to sufficiently *imminent* dangers." Glossip, 135 S. Ct. at 2737 (emphasis in original), citing Baze, 553 U.S. at 50. This evidence must show that the pain and suffering being risked is severe *in relation to* the pain and suffering that is accepted as inherent in any method of execution. Id. at 2733. Second, the challenger must "identify an alternative that is feasible, readily implemented, and in fact significantly reduces a substantial risk of severe pain." Glossip, 135 S. Ct. at 2737, citing Baze, 553 U.S. at 52. This two-part standard governs as-applied as well as facial challenges to a method of execution. See, e.g., Jones v. Kelley, 854 F.3d 1009, 1013, 1016 (8th Cir. 2017); Williams v. Kelley, 854 F.3d 998, 1001 (8th Cir. 2017); Johnson v. Lombardi, 809 F.3d 388, 390 (8th Cir. 2015); Bucklew I, 783 F.3d at 1123, 1127. As a panel we are bound by these controlling precedents. Bucklew argues the second Baze/Glossip requirement of a feasible alternative method of execution that substantially reduces the risk of suffering should not apply to "an individual who is simply too sick and anomalous to execute in a constitutional manner," like those who may not be executed for mental health reasons. See, e.g., Ford v. Wainwright, 477 U.S. 399, 410 (1986). The Supreme Court has not recognized a categorical exemption from the death penalty for individuals with physical ailments or disabilities. Thus, in the decision on appeal, the district court

properly applied the Baze/Glossip two-part standard in dismissing Bucklew's as-applied claim.

We concluded in Bucklew I, based on a record "which went well beyond the four corners of Bucklew's complaint," that the complaint's allegations, bolstered by defendants' concession "that the Department's lethal injection procedure *would be changed* on account of his condition by eliminating the use of methylene blue dye," sufficiently alleged the first requirement of an as-applied challenge to the method of execution -- "a substantial risk of serious and imminent harm that is sure or very likely to occur." 783 F.3d at 1127. We further concluded the district court's *sua sponte* dismissal was premature because these detailed allegations made it inappropriate "to assume that Bucklew would decline an invitation to amend the as-applied challenge" to plausibly allege a feasible and more humane alternative method of execution, the second requirement under the Baze/Glossip standard. Id. In remanding, we directed that further proceedings "be narrowly tailored and expeditiously conducted to address only those issues that are essential to resolving" the as-applied challenge. Id. at 1128. We explained:

> Bucklew's arguments on appeal raise an inference that he is impermissibly seeking merely to investigate the protocol without taking a position as to what is needed to fix it. He may not be "permitted to supervise every step of the execution process." Rather, at the earliest possible time, he must identify a feasible, readily implemented alternative procedure that will *significantly* reduce a substantial risk of severe pain and that the State refuses to adopt. . . . Any assertion that all methods of execution are unconstitutional does not state a plausible claim under the Eighth Amendment or a cognizable claim under § 1983.

Id. (quotation omitted; emphasis in original).

II.

On remand, consistent with our directive, the district court first ordered Bucklew to file an amended complaint that adequately identified an alternative procedure. Twice, Bucklew filed amended complaints that failed to comply with this order. Given one last chance to comply or face dismissal, on October 13, 2015, Bucklew filed a Fourth Amended Complaint. As relevant here, it alleged:

> 106. Based on Mr. Bucklew's unique and severe condition, there is no way to proceed with Mr. Bucklew's execution under Missouri's lethal injection protocol without a substantial risk to Mr. Bucklew of suffering grave adverse events during the execution, including hemorrhaging, suffocating or experiencing excruciating pain.
>
> 107. Under any scenario or with any of lethal drug, execution by lethal injection poses an enormous risk that Mr. Bucklew will suffer extreme, excruciating and prolonged pain -- all accompanied by choking and struggling for air.
>
> 128. In May 2014, the DOC also proposed a second adjustment in its protocol, offering to adjust the gurney so that Mr. Bucklew is not lying completely prone.[3] . . . As a practical matter, no adjustment would likely be sufficient, as the stress of the execution may unavoidably cause Mr. Bucklew's hemangiomas to rupture, leading to hemorrhaging, bleeding in his throat and through his facial orifices, and coughing and choking on his own blood.
>
> 129. In order to fully evaluate and establish the risks to Mr. Bucklew from execution by lethal injection, a full and complete set of imaging studies must be conducted.

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[3]In their answer to paragraph 128, defendants alleged: "Defendants admit that the Defendants offered to have the anesthesiologist position the angle of the gurney in a proper position." Thus, this fact was established by the pleadings.

> 139. Mr. Bucklew is mindful of the Court's directive to allege a feasible, readily implemented alternative procedure . . . . Mr. Bucklew has complied . . . by researching and proposing execution by lethal gas, which is specifically authorized by Missouri law and which Missouri's Attorney General has stated the DOC is prepared to implement.
>
> 150. In adherence with the pleading requirements set forth in *Glossip*, and as stated above, Mr. Bucklew specifically alleges lethal gas as a feasible and available alternative method that will significantly reduce the risk of severe pain to Mr. Bucklew.

In other words, Bucklew took the position that no modification of Missouri's lethal injection method of execution could be constitutionally applied to execute Bucklew. He proposed massive discovery allegedly needed to establish the first Baze/Glossip requirement. But his legal theory is that alternative procedures such as adjusting the gurney's position are irrelevant because *no* lethal injection procedure would be constitutional, only a change to the use of lethal gas would be adequate.

Bucklew's as-applied claim focused on two aspects of his medical condition. First, Bucklew's experts initially opined that his peripheral veins are so weak that injection of a lethal dose of pentobarbital would not adequately circulate, leading to a prolonged and painful execution. The district court concluded that discovery and expert opinions developed on remand refuted this claim. The lethal injection protocol provides that medical personnel may insert the primary intravenous (IV) line "as a central venous line" and may dispense with a secondary peripheral IV line if "the prisoner's physical condition makes it unduly difficult to insert more than one IV." Bucklew's expert Dr. Zivot conceded, and Defendants' expert, Dr. Joseph Antognini, agreed, that the central femoral vein can circulate a "fair amount of fluid" without serious risk of rupture and that Bucklew's medical condition will not affect the flow of pentobarbital after it is injected through this vein.

Second, Bucklew's experts opined that his condition will cause him to experience severe choking and suffocation during execution by lethal injection. When Bucklew is supine, gravity pulls the hemangioma tumor into his throat which causes his breathing to be labored and the tumor to rupture and bleed. When conscious, Bucklew can "adjust" his breathing with repeated swallowing that prevents the tumor from blocking his airway. But during the "twilight stage" of a lethal injection execution, Dr. Zivot opined that Bucklew will be aware he is choking on his own blood and in pain before the pentobarbital renders him unconscious and unaware of pain. Based on a study of lethal injections in horses, Dr. Zivot estimated there could be a period as short as 52 seconds and as long as 240 seconds when Bucklew is conscious but immobile and unable to adjust his breathing; his attempts to breath will create friction, causing the tumor to bleed and possibly hemorrhage. In Dr. Zivot's opinion, there is a "very, very high likelihood" that Bucklew will suffer "choking complications, including visible hemorrhaging," if he is executed by *any* means of lethal injection, including using the drug pentobarbital.

According to Defendants' expert, Dr. Antognini, pentobarbital causes death by "producing rapid, deep unconscious[ness], respiratory depression, followed by . . . complete absence of respiration, decreased oxygen levels, slowing of the heart, and then the heart stopping." In contrast to Dr. Zivot, Dr. Antognini opined that pentobarbital would cause "rapid and deep unconsciousness" within 20-30 seconds of entering Bucklew's blood stream, rendering him insensate to bleeding and choking sensations. Dr. Antognini also challenged Dr. Zivot's opinion that a supine Bucklew, unable to adjust his breathing, will be aware he is choking on his own blood and in pain from the tumor blocking his airway before the pentobarbital renders him unconscious. Dr. Antognini noted that, between 2000 and 2003, Bucklew underwent general anesthesia eight times, at least once in a supine position. In December 2016, Bucklew lay supine for over an hour undergoing an MRI, with no more than discomfort. The MRI revealed that his tumor had slightly shrunk since 2010.

In granting defendants summary judgment, the district court declined to rely on the first Glossip/Baze requirement because these conflicting expert opinions "would permit a factfinder to conclude that for as long as four minutes [after the injection of pentobarbital Bucklew] could be aware that he is choking or unable to breathe but be unable [to] 'adjust' his breathing to remedy the situation." Rather, the court held that Bucklew failed to provide adequate evidence that his alternative method of execution -- lethal gas -- was a "feasible, readily implemented" alternative that would "in fact significantly reduce a substantial risk of severe pain" as compared to lethal injection. Glossip, 135 S.Ct. at 2737; Baze, 553 U.S. at 52.

III.

To succeed in his challenge to Missouri's lethal injection execution protocol, Bucklew must establish both prongs of the Glossip/Baze standard. Glossip, 135 S. Ct. 2737. The district court held that Bucklew failed to establish the second prong of Glossip/Baze by showing that an alternative method of execution would "in fact significantly reduce a substantial risk of severe pain." As noted, Bucklew argues the Glossip/Baze standard should not apply to an as-applied challenge to a method of execution, an argument our controlling precedents have rejected. He raises two additional issues on appeal.

A. Bucklew first argues the district court erred in granting summary judgment on the second Glossip/Baze requirement because he presented sufficient evidence that his proposed alternative method of execution -- death through nitrogen gas-induced hypoxia -- "would substantially reduce his suffering." Summary judgment is not appropriate when there are material issues of disputed fact, and the Supreme Court in Glossip made clear that this issue may require findings of fact that are reviewed for clear error. See 135 S. Ct. at 2739-41 (majority opinion) and 2786 (Sotomayor, J., dissenting). However, whether a method of execution "constitutes cruel and unusual punishment is a question of law." Swindler v. Lockhart, 885 F.2d 1342, 1350 (8th

Cir. 1989). Thus, unless there are material underlying issues of disputed fact, it is appropriate to resolve this ultimate issue of law by summary judgment.

Nitrogen hypoxia is an authorized method of execution under Missouri Law. See Mo. Stat. Ann. § 546.720. Missouri has not used this method of execution since 1965 and does not currently have a protocol in place for execution by lethal gas. But there are ongoing studies of the method in other States and at least preliminary indications that Missouri will undertake to develop a protocol. Defendants do not argue this is not a feasible and available alternative.

The district court granted summary judgment based on Bucklew's failure to provide adequate evidence that execution by nitrogen hypoxia would substantially reduce the risk of pain or suffering. The court allowed Bucklew extensive discovery into defendants' knowledge regarding execution by lethal gas. But Missouri's lack of recent experience meant that this discovery produced little relevant evidence and no evidence that the risk posed by lethal injection is substantial *when compared to* the risk posed by lethal gas. See Glossip, 135 S. Ct. at 2738; Johnson, 809 F.3d at 391. Bucklew's *theory* is that execution by nitrogen hypoxia would render Bucklew insensate more quickly than lethal injection and would not cause choking and bleeding in his tumor-blocked airway. But his expert, Dr. Zivot, provided no support for this theory. Dr. Zivot's Supplemental Expert Report explained:

> [W]hile I can assess Mr. Bucklew's current medical status and render an expert opinion as to the documented and significant risks associated with executing Mr. Bucklew under Missouri's current Execution Procedure, I cannot advise counsel or the Court on how to execute Mr. Bucklew in a way that would satisfy Constitutional requirements.

Lacking affirmative comparative evidence, Bucklew relied on Dr. Antognini's deposition. In his Expert Report, Dr. Antognini concluded that "the use of lethal gas

would not significantly lessen any suffering or be less painful than lethal injection in this inmate." At his deposition, Dr. Antognini was asked:

> Q. Why does lethal gas not hold any advantage compared to lethal injection.
>
> A. Well . . . there are a lot of types of gases that could be used .... [U]sing gas would not significantly lessen any suffering or be less painful. Because, again, their onset of action is going to be relatively fast, just like Pentobarbital's onset -- onset of action.
>
> Q. That's it? Simply because it would happen quickly?
>
> A. Correct.

The district court concluded this opinion provided nothing to compare:

> Dr. Antognini specifically stated that he believed there would be no difference in the "speed" of lethal gas as compared to pentobarbital. . . . In the absence of evidence contradicting Defendants' expert and supporting Plaintiff's theory, there is not a triable issue.

On appeal, Bucklew argues the district court should have compared Dr. Zivot's opinion that lethal injection would take up to four minutes to cause Bucklew's brain death with Dr. Antognini's testimony that lethal gas would render him unconscious in the same amount of time as lethal injection, 20 to 30 seconds. But Dr. Antognini's comparative testimony was that both methods would result in unconsciousness in approximately the same amount of time. Bucklew offered no contrary *comparative* evidence and thus the district court correctly concluded that he failed to satisfy his burden to provide evidence "establishing a known and available alternative that would significantly reduce a substantial risk of severe pain." McGehee v. Hutchinson, 854 F.3d 488, 493 (8th Cir. 2017).

In addition, Bucklew's claim that he will experience choking sensations during an execution by lethal injection but not by nitrogen hypoxia rests on the proposition that he could be seated during the latter but not the former. He argues there is evidence he will be forced to remain supine during an execution by lethal injection, when his tumor will cause him to sense he is choking on his own blood, whereas he could remain seated during the administration of lethal gas, which would not cause a choking sensation. But this argument lacks factual support in the record. Having taken the position that *any* lethal injection procedure would violate the Eighth Amendment, Bucklew made no effort to determine what changes, if any, the DOC would make in applying its lethal injection protocol in executing Bucklew, other than defendants advising -- prior to remand by this court -- that dye would not be used.

Based on Bucklew's argument to the en banc court, we expected that the core of the proceedings on remand would be defining what changes defendants would make on account of Bucklew's medical condition and then evaluating *that modified procedure* under the two-part Baze/Glossip standard. On remand, Director of Corrections Ann Precythe testified that the medical members of the execution team are provided a prisoner's medical history in preparing for the execution. Precythe has authority to make changes in the execution protocol, such as how the primary IV line will be inserted in the central femoral vein or how the gurney will be positioned, if the team advises that changes are needed. While Bucklew sought and was denied discovery of the identities of the execution team's medical members, he never urged the district court to establish a suitable fact-finding procedure -- for example, by anonymous interrogatories or written deposition questions to the execution team members -- for discovery of facts needed for the DOC to define the as-applied lethal injection protocol it intends to use for Bucklew. As Bucklew did not pursue these issues, the pleadings established that defendants have proposed to reposition the gurney during Bucklew's deposition, and Director Precythe testified that she has authority to make this type of change in the execution protocol based on the execution team's advice based on review of Bucklew's medical history, but the record does not

disclose whether Bucklew will in fact be supine during the execution,[4] nor does it disclose that a "cut-down" procedure will not be used to place the primary IV line in his central femoral vein, a procedure Dr. Antognini opined was unnecessary. Bucklew simply asserts that, in comparing execution by lethal injection and by lethal gas, we must accept his speculation that defendants will employ these risk-increasing procedures. This we will not do.

Like the district court, we conclude the summary judgment record contains no basis to conclude that Bucklew's risk of severe pain would be substantially reduced by use of nitrogen hypoxia instead of lethal injection as the method of execution. Evidence that "is equivocal, lacks scientific consensus and presents a paucity of reliable scientific evidence" does not establish that an execution is sure or very likely to cause serious illness and needless suffering. Williams v. Kelley, 854 F.3d at 1001 (quotation omitted). Therefore, he failed to establish the second prong of the Glossip/Baze standard.

B. Bucklew further contends the district court erred in denying his requests for discovery relating to "M2" and "M3," two members of the lethal injection execution team. Bucklew argues he was entitled to discovery of the medical technicians' qualifications, training, and experience because it would "illuminate the nature and extent of the risks of suffering he faces." For example, if M3 was not qualified to safely place his IV in the central femoral vein, this would directly impact the risk of

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[4]Dr. Zivot surmised that Bucklew will be required to lie flat during lethal injection based on what he observed at an execution in Georgia. He gave no reason to believe that pentobarbital could not be injected through a femoral vein while Bucklew is seated. He merely opined that "[i]t's more difficult" to administer an anesthetic to someone who is sitting up. Dr. Antognini, in addition to opining that Bucklew would be rendered unconscious and insensate within 20 to 30 seconds of pentobarbital injection, noted that it was not necessary that Bucklew be supine in order to inject pentobarbital in his femoral vein.

pain and suffering. We review a district court's discovery rulings narrowly and with great deference and will reverse only for a "gross abuse of discretion resulting in fundamental unfairness." Marksmeier v. Davie, 622 F.3d 896, 903 (8th Cir. 2010).

Bucklew's argument proceeds from the premise that M2 and M3 may not be qualified for the positions for which they have been hired. But we will not assume that Missouri employs personnel who are incompetent or unqualified to perform their assigned duties. See Clemons v. Crawford, 585 F.3d 1119, 1128 (8th Cir. 2009). He further argues that deposition of M2 and M3 is necessary to understand how they will handle a circumstance in case something goes wrong during Bucklew's execution. The potentiality that something may go wrong in an execution does not give rise to an Eighth Amendment violation. Zink, 783 F.3d at 1101. "Some risk of pain is inherent in any method of execution -- no matter how humane -- if only from the prospect of error in following the required procedure. . . . [A]n isolated mishap alone does not give rise to an Eighth Amendment violation." Baze, 553 U.S. at 47, 50. Thus, the district court's ruling was consistent with our instruction in remanding that Bucklew "may not be permitted to supervise every step of the execution process." Bucklew I, 783 F.3d at 1128 (quotation omitted). The Baze/Glossip evaluation must be based on the as-applied pre-execution protocol, assuming that those responsible for carrying out the sentence are competent and qualified to do so, and that the procedure will go as intended.

III. Conclusion

Having thoroughly reviewed the record, we conclude that Bucklew has failed to establish that lethal injection, as applied to him, constitutes cruel and unusual punishment under the Eighth and Fourteenth Amendments. Therefore, we affirm the judgment of the district court.

COLLOTON, Circuit Judge, dissenting.

Russell Bucklew alleges that the State of Missouri's method of execution by lethal injection violates his rights under the Eighth and Fourteenth Amendments. He seeks an injunction prohibiting an execution by that method. The district court granted summary judgment for the State, but there are genuine disputes of material fact that require findings of fact by the district court before this dispute can be resolved. I would therefore remand the case for the district court promptly to conduct further proceedings.

Bucklew's claim under 42 U.S.C. § 1983 requires him to prove two elements: (1) that the State's method of execution is sure or very likely to cause him severe pain, and (2) that an alternative method of execution that is feasible and readily implemented would significantly reduce the substantial risk of severe pain. *Glossip v. Gross*, 135 S. Ct. 2726, 2737 (2015); *Bucklew v. Lombardi*, 783 F.3d 1120, 1123, 1128 (8th Cir. 2015) (en banc). On the first element, the district court concluded that taking the evidence in the light most favorable to Bucklew, there is a substantial risk under Missouri's lethal injection protocol that Bucklew will experience choking and an inability to breathe for up to four minutes. On the second element, however, the court ruled as a matter of law that Bucklew's suggested alternative method—execution by administration of nitrogen gas—would not significantly reduce the substantial risk that the court identified under the first element. In my view, the district court's reasoning as to the first element is inconsistent with its summary disposition of Bucklew's claim on the second.

On the first element, Bucklew's theory is that he will suffer severe pain by prolonged choking or suffocation if the State executes him by lethal injection. He contends that when he lies supine on the execution gurney, tumors in his throat will block his airway unless he can "adjust" his positioning to enable breathing. Bucklew

argues that if an injection of pentobarbital renders him unable to adjust his positioning while he can still sense pain, then he will choke or suffocate.

In assessing that claim, the district court cited conflicting expert testimony from Bucklew's expert, Dr. Joel Zivot, and the State's expert, Dr. Joseph Antognini. Dr. Antognini testified that if the State proceeded by way of lethal injection using pentobarbital, then Bucklew would be unconscious within twenty to thirty seconds and incapable of experiencing pain at that point. R. Doc. 182-5, at 10, 40-41. Dr. Zivot, however, differed: "I strongly disagree with Dr. Antognini's repeated claim that the pentobarbital injection would result in 'rapid unconsciousness' and therefore Mr. Bucklew would not experience any suffocating or choking." R. Doc. 182-1, at 147. Zivot opined that Bucklew "would likely experience unconsciousness that sets in progressively as the chemical circulates through his system," and that "during this in-between twilight stage," Bucklew "is likely to experience prolonged feelings of suffocation and excruciating pain." *Id.*

In his deposition, Dr. Zivot opined that "there will be points," before Bucklew dies, "where he's beginning to experience the effects of the pentobarbital, where his ability to control and regulate and adjust his airway will be impaired, although there will still be the experience capable of knowing that he cannot make the adjustment, and will experience it as choking." *Id.* at 81. When directed to Dr. Antognini's opinion that Bucklew would be unaware of noxious stimuli within twenty to thirty seconds of a pentobarbital injection, Dr. Zivot observed that Antognini's opinion was based on a study involving dogs from fifty years ago and testified that his "number would be longer than that." *Id.* at 85. When asked for his "number," Dr. Zivot pointed to a study on lethal injections administered to horses; he said the study recorded "a range of as short as fifty-two seconds and as long as about two hundred and forty seconds before they see isoelectric EEG." *Id.* at 85-86. Dr. Zivot noted that the "number" that he derived from the horse study was "more than twice as long as" the number suggested by Dr. Antognini. *Id.* at 86. He defined "isoelectric EEG" as

"indicative of at least electrical silence on the parts of the brain that the electroencephalogram has access to." *Id.*

The district court observed that "[a]n execution is typically conducted with the prisoner lying on his back," and that the record "establishes that [Bucklew] has difficulty breathing while in that position because the tumors can cause choking or an inability to breathe." The court understood Dr. Zivot to mean that "it could be fifty-two to 240 seconds before the pentobarbital induces a state in which [Bucklew] could no longer sense that he is choking or unable to breathe." Thus, the court concluded that "construing the Record in [Bucklew's] favor reveals that it could be fifty-two to 240 seconds before the pentobarbital induces a state in which [Bucklew] could no longer sense that he is choking or unable to breathe." Again, the court reasoned that "the facts construed in [Bucklew's] favor would permit a factfinder to conclude that for as long as four minutes [Bucklew] could be aware that he is choking or unable to breathe but be unable to 'adjust' his breathing to remedy the situation." On that basis, the court presumed for purposes of the motion for summary judgment that "there is a substantial risk that [Bucklew] will experience choking and an inability to breathe for up to four minutes."

The State disputes that there is a genuine dispute of material fact on the first element of Bucklew's claim, but the district court properly concluded that findings of fact were required. Bucklew pointed to evidence from Missouri corrections officials that prisoners have always laid flat on their backs during executions by lethal injection in Missouri. R. Doc. 182-7, at 10; R. Doc. 182-9, at 1; R. Doc. 182-12, at 29, 91. One official testified that he did not know whether the gurney could be adjusted. R. Doc. 182-12, at 91. Another official believed that the head of the gurney "could" be raised (or that a gurney with that capability could be acquired), and that an anesthesiologist would have "the freedom" to adjust the gurney "if" he or she determined that it would be in the best medical interest of the offender to do so. R. Doc. 182-7, at 14. But the State did not present evidence about how it would position

Bucklew or the gurney during his execution. On a motion for summary judgment, the district court was required to construe the evidence in the light most favorable to Bucklew. Under that standard, without undisputed evidence from the State that it would alter its ordinary procedures, the court did not err by concluding that a finder of fact could infer that the State would proceed as in all other executions, with Bucklew lying on his back.[5]

The State argues that the district court erred in discerning a genuine dispute of material fact on the first element because Dr. Zivot did not specify the length of the expected "twilight stage" during which Bucklew would be unable to adjust his positioning yet still sense pain. The State also complains that Dr. Zivot did not specify that Bucklew's pain awareness would continue for fifty-two seconds or longer until brain waves ceased. There certainly are grounds to attack the reliability and credibility of Dr. Zivot's opinion, including the imprecision of some of his testimony, his opposition to all forms of lethal injection, his possible misreading of the horse study on which he partially relied, and his inaccurate predictions of calamities at prior executions. But he did opine that Bucklew was likely to "experience prolonged feelings of suffocation and excruciating pain" if executed by lethal injection, R. Doc. 182-1, at 147, and that there "will be points" before Bucklew dies when his ability to regulate his airway will be impaired so that he "will experience it as choking." *Id.* at

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[5]Bucklew alleged in Paragraph 128 of his complaint that the State had offered to adjust the gurney so that Bucklew is not lying completely prone, but then continued as follows immediately thereafter: "Although the stated intent was to reduce the choking risk to Mr. Bucklew, the DOC has obtained no imaging studies of Mr. Bucklew since 2010, and therefore has no information on which to base any decisions about the angle of the gurney." R. Doc. 53, at 43-44. The district court noted the State's suggestion "that the execution could be performed with [Bucklew] in a different position," but explained that "there is no evidence whether this has an effect on the procedure as a whole," and concluded that the State had "not provided the Court with a basis for granting summary judgment based on the possibility of performing the execution with [Bucklew] in a sitting (or other) position."

81. The district court did not err in concluding that it could not resolve the dispute between the experts on summary judgment.

On the second element of Bucklew's claim, the district court concluded as a matter of law that Bucklew failed to show that his proposed alternative method of execution—administration of nitrogen gas—would significantly reduce the substantial risk of severe pain that the court recognized under the first element. The majority affirms the district court's judgment on this basis. Taking the evidence in the light most favorable to Bucklew, however, a factfinder could conclude that nitrogen gas would render Bucklew insensate more quickly than pentobarbital and would thus eliminate the risk that he would experience prolonged feelings of choking or suffocation. Dr. Antognini testified that a person who is administered nitrogen gas "would be unconscious very quickly," and that the onset of action from lethal gas "is going to be relatively fast, *just like Pentobarbital's onset*." R. Doc. 182-5, at 58-59 (emphasis added). Given Dr. Antognini's testimony that pentobarbital would render Bucklew insensate within twenty to thirty seconds, the record in the light most favorable to Bucklew supports a finding based on Antognini's testimony that nitrogen gas would relieve Bucklew from any pain of choking or suffocating within twenty to thirty seconds. A trier of fact may accept all, some, or none of a witness's testimony, *United States v. Candie*, 974 F.2d 61, 65 (8th Cir. 1992), and a plaintiff may rely on testimony from the defendant's expert to meet his burden if the testimony is advantageous to the plaintiff. *See IBEW Local 98 Pension Fund v. Best Buy Co., Inc.*, 818 F.3d 775, 782 (8th Cir. 2016). If the factfinder accepted Dr. Zivot's testimony as to the effect of pentobarbital, and Dr. Antognini's uncontroverted testimony as to effect of nitrogen gas, then Bucklew's proposed alternative method would significantly reduce the substantial risk of severe pain that the district court identified in its analysis of the first element.

For these reasons, there are genuine disputes of material fact that preclude summary judgment and require findings of fact by the district court. I would

therefore remand the case for further proceedings. The district court may then promptly make appropriate factual findings about, among other things, how Bucklew will be positioned during an execution, whether his airway will be blocked during an execution, and how pentobarbital (and, if necessary, nitrogen gas) will affect his consciousness and ability to sense potential pain.

* * *

The State contends that we should not reach the merits of Bucklew's claim because several procedural obstacles require dismissal of his complaint. The majority does not rely on these points, and I find them unavailing.

First, the State contends that Bucklew did not raise his present claim in his fourth amended complaint. Bucklew's complaint, however, does allege the essence of his current theory. The complaint asserts that the tumors in Bucklew's throat require "him to sleep with his upper body elevated" because if he lies flat, "the tumor then fully obstructs his airway." *Id.* at 18-19. It continued: "Executions are conducted on a gurney, and the risks arising from Mr. Bucklew's airway are even greater if he is lying flat. Because of the hemangiomas, Mr. Bucklew is unable to sleep in a normal recumbent position because the tumors cause greater obstruction in that position." R. Doc. 53, at 35. Bucklew further alleged that execution by lethal injection "poses an enormous risk that Mr. Bucklew will suffer extreme, excruciating and prolonged pain – all accompanied by choking and struggling for air." *Id.* at 36. The complaint was adequate under a notice pleading regime to raise a claim that the execution procedure would result in an obstructed airway and choking or suffocation.

If necessary, moreover, the district court acted within its discretion by treating the complaint as impliedly amended to include Bucklew's present claim. *See* Fed. R. Civ. P. 15(b)(2). Bucklew clearly notified the State of his contention in his opposition to the State's motion for summary judgment. R. Doc. 192-1, at 1-3, 11-17.

Yet rather than communicate surprise and object that the claim was not pleaded, the State addressed Bucklew's contention on the merits. R. Doc. 200, at 4-5. Where a party has actual notice of an unpleaded issue and has been given an adequate opportunity to cure any surprise resulting from a change in the pleadings, there is implied consent to an amendment. *Trip Mate, Inc. v. Stonebridge Cas. Ins. Co.*, 768 F.3d 779, 784-85 (8th Cir. 2014).

Second, the State argues that the five-year statute of limitations bars Bucklew's claim, because he was aware of his claim in 2008 and did not file his complaint until May 9, 2014. A claim under § 1983 accrues when a plaintiff has "a complete and present cause of action" and "can file suit and obtain relief." *Wallace v. Kato*, 549 U.S. 384, 388 (2007) (quoting *Bay Area Laundry & Dry Cleaning Pension Trust Fund v. Ferbar Corp. of Cal.*, 522 U.S. 192, 201 (1997)). Bucklew asserts that he did not have knowledge of his present claim, and therefore could not have filed suit and obtained relief, until his medical condition progressed and he was examined by Dr. Zivot in April 2014. As evidence that Bucklew could have brought his claim earlier, the State relies on a 2008 petition that Bucklew submitted to the Missouri Supreme Court. The petition sought funding for an expert witness to investigate the interaction of the State's existing execution protocol with Bucklew's health condition. The possible claim addressed in the 2008 funding petition, however, focused on the potential for uncontrolled bleeding and ineffective circulation of drugs within Bucklew's body under the State's former three-drug execution protocol. The petition does not demonstrate that Bucklew was then on notice of a claim that a future execution protocol using the single drug pentobarbital would create a substantial risk of severe pain resulting from tumors blocking his airway while laying supine during an execution.

Third, the State urges that Bucklew's claim is barred by *res judicata* or claim preclusion, because Bucklew could have litigated his as-applied challenge to the execution protocol in an earlier case styled *Zink v. Lombardi*, No. 12-04209-CV-C-

BP. In *Zink*, a group of inmates sentenced to death, including Bucklew, brought a facial challenge to Missouri's execution protocol. A complaint was filed in August 2012, and the eventual deadline for motions to amend pleadings was January 27, 2014. Principles of claim preclusion do not bar Bucklew's as-applied challenge if he was unaware of the basis for the claim in time to include it in the *Zink* litigation. *See Whole Woman's Health v. Hellerstedt*, 136 S. Ct. 2292, 2305 (2016). The State again points to Bucklew's 2008 funding petition in support of its preclusion defense, but for reasons discussed, that petition does not establish that Bucklew's present claim was available to him in 2008. At oral argument, the State argued that Bucklew could have added his as-applied challenge to the *Zink* litigation after he was examined by Dr. Zivot in April 2014, because the district court granted the *Zink* plaintiffs leave to amend their complaint in May 2014. But the court's order allowed the *Zink* plaintiffs leave to amend only a single count of the complaint to allege a feasible alternative method of execution. The order did not reopen the pleadings deadline for as-applied claims by the several individual plaintiffs. *See Zink v. Lombardi*, No. 12-04209-CV-C-BP, 2014 WL 11309998, at *4-5, 12 (W.D. Mo. May 2, 2014). The State therefore has not established that Bucklew's as-applied claim is barred by *res judicata*.

* * *

For these reasons, I would reverse the judgment of the district court and remand for further proceedings to be conducted with dispatch.

IN THE UNITED STATES DISTRICT COURT FOR THE
WESTERN DISTRICT OF MISSOURI
WESTERN DIVISION

RUSSELL BUCKLEW,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Case No. 14-8000-CV-W-BP
	)	
GEORGE A. LOMBARDI, *et al.*,	)	
	)	
Defendants.	)	

ORDER AND OPINION GRANTING
DEFENDANTS' MOTION FOR SUMMARY JUDGMENT

Pending is Defendants' Motion for Summary Judgment, which seeks summary judgment on the Eighth Amendment Claim presented in Count I[1] of the Fourth Amended Complaint. Defendants contend that the undisputed facts demonstrate (1) they are entitled to judgment as a matter of law on the merits, (2) Plaintiff's claim is barred by the statute of limitations, and (3) Plaintiff's claim is barred by principles of claim preclusion.[2] As discussed below, the Court agrees that the undisputed facts in the Record establish that Plaintiff cannot prevail on his Eighth Amendment claim, and for that reason the motion, (Doc. 181), is **GRANTED.**[3]

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[1] Counts II and III were previously dismissed by the Court. (Doc. 63.)

[2] Defendants also contend the Court should dismiss the case because it lacks jurisdiction. (Doc. 182, pp. 9-10.) The argument has been presented before, and the Court rejects it for the reasons previously stated. (*See* Doc. 101.) To the extent that Defendants' argument has shifted to contend that the Court lacks jurisdiction because the Record now proves that Plaintiff will not suffer a redressable injury, the Court rejects this argument as well. Defendants' argument relates to Plaintiff's ability to prove his claim, not to the Court's jurisdiction, and crediting Defendants' argument would essentially require dismissal (without prejudice) for lack of jurisdiction anytime a plaintiff fails to prove his claim. It "is important not to conflate the injury and traceability requirements of a standing analysis with the plaintiff's ultimate burden of proof as to the issues of damages and causation at a trial on the merits," *Brown v. Medtronic, Inc.*, 628 F.3d 451, 457 (8th Cir. 2010), and this observation applies equally when the merits are considered at the summary judgment stage.

[3] The Court does not address the statute of limitations or claim preclusion arguments. These issues were not addressed before the first appeal, and the Court of Appeals declined to address them in the first instance. *Bucklew v. Lombardi*, 783 F.3d 1120, 1122 n.1, 1128-29 (8th Cir. 2015) (en banc). Following remand Defendants sought dismissal on these grounds, but the Court denied the request without prejudice because the Record was not yet

I. BACKGROUND

A. Procedural History

Plaintiff Russell Bucklew was convicted in state court of first degree murder, kidnapping, burglary, forcible rape, and armed criminal action. He was sentenced to death for the murder and various terms of years on the other crimes. *State v. Bucklew*, 973 S.W.2d 83 (Mo. 1998) (en banc), *cert. denied*, 525 U.S. 1082 (1999). His requests for postconviction relief and habeas relief were denied. *Bucklew v. State*, 38 S.W.3d 395 (Mo.) (en banc), *cert. denied*, 534 U.S. 964 (2001); *Bucklew v. Luebbers*, 436 F.3d 1010 (8th Cir.), *cert. denied*, 549 U.S. 1079 (2006).

Plaintiff filed this suit in May 2014. The Court dismissed the case, but the dismissal was reversed and the case was remanded. *Bucklew v. Lombardi*, 783 F.3d 1120, 1128 (8th Cir. 2015) (en banc). After the Mandate was issued, Bucklew filed a series of Amended Complaints. The latest – the Fourth Amended Complaint – is the operative pleading, and as noted earlier Count I is the only remaining count. Count I asserts an Eighth Amendment challenge, contending that Missouri's method of execution is unconstitutional as applied to Plaintiff because of his unique medical condition.

B. Facts

Plaintiff suffers from a congenital condition known as cavernous hemangioma. The disease causes clumps of weak, malformed blood vessels and tumors to grow throughout his body, including his head, face, neck and throat. The tumors are very susceptible to rupture. The

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sufficiently developed and various legal complexities (some of which had been identified by the Court of Appeals, 783 F.3d at 1122 n.1) had not been addressed. The Court's Order explained some of the difficulties involved in determining whether these doctrines apply. (Doc. 63, pp. 9-13.) The Supreme Court has since discussed the doctrine of claim preclusion when an as-applied challenge follows an unsuccessful facial challenge. *Whole Woman's Health v. Helerstedt*, 136 S. Ct. 2292, 2305 (2016). In reasserting these arguments Defendants have not addressed any of these factual or legal issues; they have merely cited general principles without explaining how they apply in this unique situation, and cited to the same facts that were earlier deemed to be incomplete and therefore insufficient. Given the Court's ruling on the merits there is no need to further delay resolution of this case to provide Defendants another opportunity to address these issues.

disease also affects Plaintiff's circulatory system, resulting in (among other effects) compromised peripheral veins in his hands and arms. The tumors in his throat also make it difficult for him to breathe, and that difficulty is exacerbated when he is in a supine position. Plaintiff's condition is incurable, and surgery to alleviate the tumors is not possible due to the risk of severe bleeding.

Missouri's death penalty protocol has not been succinctly described, but the parties implicitly agree (and the Record demonstrates, (*e.g.*, Doc. 182-1, pp. 135-36; Doc. 197-1; Doc. 182-7, pp. 7-9)),[4] that it involves the intravenous administration of pentobarbital in dosages sufficient to cause unconsciousness and eventually death. In terms of the IV's placement, the protocol provides as follows:

> Medical personnel shall determine the most appropriate locations for intravenous (IV) lines. Both a primary IV line and a secondary IV line shall be inserted unless the prisoner's physical condition makes it unduly difficult to insert more than one IV. Medical personnel may insert the primary IV line as a peripheral line or a central venous line (e.g., femoral, jugular, or subclavian) provided they have appropriate training, education and experience for that procedure. The secondary IV line is a peripheral line.

(Doc. 182-1, p. 1.) The parties seem to agree that because of the cavernous hemangioma Plaintiff's peripheral veins cannot be used in this process because of the risk that they will rupture (assuming that an IV could be placed in them in the first place). However, the portion of the protocol quoted above confirms that a central line in the femoral vein may be used instead of inserting an IV in the peripheral veins. With respect to the risk of Plaintiff's femoral vein rupturing, Plaintiff's expert, (Dr. Joel Zivot), testified that the femoral vein is large and capable of "tak[ing] a fair amount of fluid" when the central line is properly placed, and the risk of that vein rupturing is "unlikely." (Doc. 182-1, p. 26.) Dr. Zivot also denied having any reason to believe that Plaintiff's medical condition made his femoral vein more susceptible to rupture than

[4] All page numbers are those generated by the Court's CM/ECF system.

might otherwise be expected, and confirmed that his testimony about the risk of Plaintiff's veins rupturing was limited to Plaintiff's peripheral veins. (Doc. 182-1, pp. 70-71, 77-78.) Plaintiff also concedes that there is no evidence in the Record establishing that Plaintiff has any problem with his veins *other* than his peripheral veins, including his femoral vein. (Doc. 197, p. 9.) Finally, the Record confirms that Plaintiff's medical condition will not affect the flow of chemicals in his bloodstream once they are introduced through the femoral vein, or otherwise affect his expected response to the pentobarbital. (*E.g.*, Doc. 182-1, pp. 65-66, 213-14, 219.)

An execution is typically conducted with the prisoner lying on his back. The procedure for inserting a central line is also usually performed with the person in the supine position. The Record establishes that Plaintiff has difficulty breathing while in that position because the tumors can cause choking or an inability to breathe. Sometimes the tumors bleed, thereby exacerbating the sensation. When required to be on his back, Plaintiff can "adjust" his breathing so that he can remain in that position; for instance, Plaintiff was able to lie on his back for approximately one hour while undergoing an MRI. However, there are factual disputes as to (1) Plaintiff's ability to adjust his breathing once the pentobarbital begins to take effect, (Doc. 181-1, pp. 81-82), and (2) how quickly the pentobarbital will deprive Plaintiff of the ability to sense that he is choking or unable to breathe. On the latter point Dr. Zivot testified that it could be fifty-two to 240 seconds before the pentobarbital induces a state in which Plaintiff could no longer sense that he is choking or unable to breathe. (*E.g.*, Doc. 182-1, pp. 84-88.) Defendants point out that their expert, Dr. Joseph Antognini, opined that Plaintiff would be unconscious within twenty to thirty seconds and at that point would be incapable of experiencing pain. (Doc. 182-1, pp. 198-99; Doc. 182-5, pp. 60-62.) However, the Court cannot resolve this dispute between the experts on summary judgment.

Defendants also invite the Court to analyze the study Dr. Zivot relied upon to find that fifty-two seconds of awareness is the worst case scenario because that is when brain death occurs. (Doc. 200, p. 15.) Dr. Zivot addressed this issue in his deposition, explaining that the study's use of the term "brain death" was a "misnomer" because the study marked "brain death" before measurable brain activity terminated; he then indicated that pain might be felt until measurable brain activity ceases. (Doc. 182-1, pp. 83-86.)[5] The Court also cannot resolve this factual dispute on summary judgment. Therefore, construing the Record in Plaintiff's favor reveals that it could be fifty-two to 240 seconds before the pentobarbital induces a state in which Plaintiff could no longer sense that he is choking or unable to breathe.[6]

II. DISCUSSION

A moving party is entitled to summary judgment on a claim only upon a showing that "there is no genuine issue of material fact and that the moving party is entitled to a judgment as a matter of law." *See generally Williams v. City of St. Louis*, 783 F.2d 114, 115 (8th Cir. 1986). "[W]hile the materiality determination rests on the substantive law, it is the substantive law's identification of which facts are critical and which facts are irrelevant that governs." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986). Thus, "[o]nly disputes over facts that might affect the outcome of the suit under the governing law will properly preclude the entry of summary judgment." *Wierman v. Casey's Gen. Stores*, 638 F.3d 984, 993 (8th Cir. 2011) (quotation omitted). In applying this standard, the Court must view the evidence in the light

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[5] This may be a generous interpretation of Dr. Zivot's testimony. However, (1) the Record must be construed in the light most favorable to Plaintiff and (2) the Court is not required to resolve the elements of Plaintiff's claim in any particular order. Therefore, the Court deems it appropriate to adopt this interpretation of Dr. Zivot's testimony in order to frame the discussion about Plaintiff's proffered alternative method of execution.

[6] Defendants also suggest that the execution could be performed with Plaintiff in a different position, but there is no evidence whether this has an effect on the procedure as a whole or the procedure for inserting a central line specifically. In light of the Record's silence on these matters, Defendants have not provided the Court with a basis for granting summary judgment based on the possibility of performing the execution with Plaintiff in a sitting (or other) position.

most favorable to the non-moving party, giving that party the benefit of all inferences that may be reasonably drawn from the evidence. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587-88 (1986); *Tyler v. Harper*, 744 F.2d 653, 655 (8th Cir. 1984), *cert. denied*, 470 U.S. 1057 (1985). A party opposing a motion for summary judgment may not simply deny the allegations, but must point to evidence in the Record demonstrating the existence of a factual dispute. Fed. R. Civ. P. 56(c)(1); *Conseco Life Ins. Co. v. Williams*, 620 F.3d 902, 909-10 (8th Cir. 2010).

In *Glossip v. Gross*, the Supreme Court determined "what a prisoner must establish to succeed on an Eighth Amendment method-of-execution claim." 135 S. Ct. 2726, 2737 (2015). "[D]ecisions in this area have been animated in part by the recognition that because it is settled that capital punishment is constitutional, it necessarily follows that there must be a constitutional means of carrying it out." *Id.* at 2732-33. Moreover, "because some risk of pain is inherent in any method of execution, we have held that the Constitution does not require the avoidance of all risk of pain." *Id.* at 2733. In light of these observations, a prisoner alleging that a particular form of execution is cruel and unusual within the meaning of the Eighth Amendment must first establish that the method to be utilized "presents a risk that is sure or very likely to cause serious illness and needless suffering, and give rise to sufficiently imminent dangers." *Id.* at 2737 (quotations and emphasis deleted). The prisoner must then "identify a known and available alternative method of execution that entails a lesser risk of pain, a requirement of all Eighth Amendment method-of-execution claims." *Id.* at 2731. The alternative must be "feasible, readily implemented, and in fact significantly reduce[ ] [the] substantial risk of severe pain." *Id.* at 2737; *see also Bucklew*, 783 F.3d at 1128. The Court has discretion to decide the order in which it will address these two components of Plaintiff's claim. *Bucklew*, 783 F.3d at 1128.

A. Risk of Serious Illness or Needless Suffering

Defendants contend that the uncontroverted facts demonstrate that Plaintiff is not sure or likely to experience a serious injury or needless suffering. Plaintiff contends that he has demonstrated a serious risk that he will experience needless pain and suffering because (1) the weakness in his peripheral veins precludes using them to administer the pentobarbital, and (2) he will choke or otherwise be unable to breathe for an extended period of time before the pentobarbital takes full effect. The Court concludes that the Record establishes that (1) the use of Plaintiff's femoral vein does not present any risk of serious illness or needless suffering, and (2) the Record does not permit a conclusive determination regarding the risk that Plaintiff will choke and be unable to breathe for a period of time that would violate the Eighth Amendment.

1. Use of Plaintiff's Femoral Vein

As discussed in Part I.B, there is an apparent consensus that an IV cannot be safely inserted in Plaintiff's peripheral veins. However, the execution protocol allows a central line to be inserted in Plaintiff's femoral vein, and the Record establishes that this can be done without the risk of complications attributable to Plaintiff's congenital condition. The Court also notes that Plaintiff's legal argument does not discuss Defendant's evidence that his femoral vein can be used to administer the execution drugs. (Doc. 197, pp. 34-43.) Plaintiff discusses the use of his femoral vein only in the portion of his Opposition that addresses the facts in the Record, and even in that context he does not present any legal arguments based on those facts. Nonetheless, the Court will briefly discuss these factual issues.

Generally speaking, Plaintiff addresses the potential difficulty in locating the femoral vein and the fact that medical personnel might require multiple attempts to locate it.[7] This, he

[7] To the extent Plaintiff contends that there is no evidence demonstrating that Plaintiff's femoral veins are unaffected by his disease, this argument does not change the Court's opinion. If there is no evidence that will establish any

posits, will increase his stress, thereby increasing his breathing rate and making it more likely that he will choke. Plaintiff also suggests that if the procedure is not performed properly the drugs might be injected in an artery instead of the vein. (Doc. 197, pp. 18-20.) However, Plaintiff does not quantify these risks, nor (as stated) does he explain how these facts independently establish that the current protocol presents a risk of serious illness or needless suffering. The possibility that Plaintiff might experience increased stress (or, more precisely, more stress than the situation might otherwise produce) is particularly speculative, as are the effects of that extra stress. Moreover, on several occasions the Court has observed that Plaintiff cannot predicate his Eighth Amendment claim on the bare possibility that a medical procedure might be performed incorrectly.

The uncontroverted facts demonstrate that the lethal injection protocol can be implemented by using Plaintiff's femoral vein, and that doing so will not create a substantial risk of serious injury or needless suffering. Therefore, the fact that Plaintiff's peripheral veins cannot be used will not support the first component of Plaintiff's claim.

2. Plaintiff's Obstructed Airway

As discussed in Part I.B, the facts construed in Plaintiff's favor would permit a factfinder to conclude that for as long as four minutes Plaintiff could be aware that he is choking or unable to breathe but be unable "adjust" his breathing to remedy the situation. In seeking summary judgment Defendants have not contended that such a situation would not satisfy *Glossip* (and the Court does not hold whether it does or does not); Defendants' sole argument is that Plaintiff would likely experience this sensation for twenty to thirty seconds or, at worst, fifty-two seconds. As discussed before, this is a factual dispute that the Court cannot resolve on summary

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problems with the use of Plaintiff's femoral vein, then there is no reason to have a trial on the issue. Without evidence, it is a foregone conclusion that Plaintiff cannot prevail on this issue.

judgment, and would have to be resolved at trial. Therefore, solely for purposes of further discussion, the Court presumes that there is a substantial risk that Plaintiff will experience choking and an inability to breathe for up to four minutes.

B. Alternative Measures

Plaintiff contends that death through nitrogen gas-induced hypoxia will significantly reduce the risks of severe pain and suffering. Defendants do not argue that this method of execution is not feasible or readily implemented. Instead, Defendants argue that the Record demonstrates this method of execution will not reduce Plaintiff's risk of pain and suffering. Plaintiff disputes this point and further contends that he is not required to identify an alternative method of execution.

The Court addresses Plaintiff's second point first. He contends that *Glossip* does not apply because that case involved a facial challenge and he presents an as-applied challenge. The Court disagrees. First, *Glossip* set forth the requirements for an Eighth Amendment challenge to an execution method. The Supreme Court did not distinguish between facial and as-applied challenges, and it did not provide a basis for interpreting *Glossip* as creating such a distinction. To the contrary, the Supreme Court specified that the need to "identify a known and available alternative method of execution that entails a lesser risk of pain [is] a requirement of *all* Eighth Amendment method-of-execution claims." *Glossip*, 135 S. Ct. at 2731 (emphasis supplied). Second, the Eighth Circuit clearly directed that Plaintiff must (1) identify at the pleading stage and (2) eventually prove that there is an alternative that will significantly reduce the risk. *Bucklew*, 783 F.3d at 1128. This is the law of the case, and the Court must adhere to it. Third, the Eighth Circuit has explicitly rejected Plaintiff's argument in other cases. *Williams v. Kelley*, 854 F.3d 998, 1001 (8th Cir.), *cert. denied*, 137 S. Ct. 1284 (2017) (citing *Johnson v. Lombardi*,

809 F.3d 388, 391 (8th Cir.), *cert. denied*, 136 S. Ct. 601 (2015)). For these reasons, the Court concludes Plaintiff is required to prove that there is a feasible and readily available alternative that will significantly reduce the risk of suffering that lethal injection will present.

The Court agrees with Defendants that the facts in the Record do not present a triable dispute on this issue. Given the risk of suffering that the Court identified as potentially supported by the Record, (*see* Part II.A.2, *supra*), the question is whether (1) the use of nitrogen gas will cause Plaintiff to become unaware of his choking and breathing difficulties sooner than he would under the current protocol, and (2) whether that difference in time is sufficient to permit the Court to find that nitrogen gas will make a "significant" difference in Plaintiff's suffering. Put another way: a finder of fact might conclude that if pentobarbital is used, there is a four minute period of time during which Plaintiff would experience significant suffering. Given that, could a finder of fact conclude that the use of nitrogen gas will significantly reduce that period of awareness?

Defendants point to their expert's supplemental report, wherein he states that "the use of lethal gas does not hold any advantage compared to lethal injection with respect to pain and suffering. Both methods would result in minimal pain and suffering." (Doc. 182-1.) This requires Plaintiff to identify facts in the Record that create a factual dispute necessitating a trial, but Plaintiff has not identified any such facts. Dr. Zivot would not address the issue in his deposition, (Doc. 182-1, pp. 38-40), and Plaintiff does not contend that Dr. Zivot's testimony creates a factual dispute. Plaintiff instead relies on Dr. Antognini's deposition, but the Court has reviewed the cited testimony and finds nothing that supports Plaintiff's position.[8] Dr. Antognini

[8] Plaintiff also attempts to create factual disputes about the Missouri Department of Corrections' efforts to research the viability and effects of executing prisoners with nitrogen gas, but the issue is not relevant under the governing legal principles.

was asked to compare the use of pentobarbital to nitrogen gas, but his answer does not indicate that there are any differences between them. (Doc. 182-5, pp. 58-59.) To the contrary, he stated:

> You know, you get – you can get suffering from hypoxia, you know, because somebody can be awake and realize that they're not getting enough oxygen. So depending on – on how it's used, you might get more suffering from nitrogen gas than you would from Pentobarbital. Or you might get less suffering, you know, it depends on how you would use it, I guess.

(Doc. 182-5, p. 59.) As relevant to the claim at issue, Dr. Antognini specifically stated that he believed there would be no difference in the "speed" of lethal gas as compared to pentobarbital. (*Id.*) Plaintiff points to Dr. Antognini's indication that nitrogen gas would "quickly" cause unconsciousness, (Doc. 182-5, p. 59), but this is unavailing for two reasons. First, Dr. Antognini said the same thing about pentobarbital; in his opinion, both would "quickly" cause unconsciousness. Thus, this opinion does not support the proposition that nitrogen hypoxia would cause unconsciousness sooner than pentobarbital. Second, the premise for Plaintiff's claim is that there is a period between unconsciousness and brain death during which he will experience pain. Therefore, establishing the speed with which unconsciousness will be achieved does not support Plaintiff's claim; he must identify evidence establishing how quickly nitrogen-induced hypoxia will cause brain death so that any such evidence can be contrasted with Dr. Zivot's testimony that Plaintiff might be aware that he is choking for up to four minutes. There is no evidence suggesting that nitrogen hypoxia will be faster than pentobarbital, so there is no factual dispute to resolve. In the absence of evidence contradicting Defendants' expert and supporting Plaintiff's theory, there is not a triable issue.

Plaintiff also points to the fact that Louisiana and Oklahoma have approved the use of nitrogen gas in their death penalty protocols. This evidence might be relevant in establishing the feasibility or ready availability of this method of execution, but it does not establish whether

nitrogen gas will significantly reduce the risk of suffering Plaintiff has described. Plaintiff cites a report from Oklahoma for the proposition that "high altitude pilots who train to recognize the symptoms of nitrogen hypoxia in airplane depressurizations do not report any feelings of suffocation, choking or gagging." (Doc. 197, p. 48 n.6 (citing Doc. 192-14, p. 78).) Assuming this is competent evidence that can be considered on summary judgment, Plaintiff is not trained to recognize the symptoms of nitrogen hypoxia and it is unlikely that the pilots who were trained to recognize the symptoms of hypoxia also suffered from cavernous hemangioma. Plaintiff additionally refers to a report from Louisiana, which itself cites other materials for the proposition that nitrogen hypoxia allows a person to expel carbon dioxide buildup and thereby reduce suffocation caused by respiratory acidosis. (Doc. 197, p. 48 n.6 (citing Doc. 192-17, p. 19).) Assuming again that this is competent evidence, Plaintiff's theory is that he will experience suffocation due to his tumors, not due to respiratory acidosis. Finally, none of this evidence purports to compare the effects of nitrogen gas hypoxia to the effects of pentobarbital, particularly as related to the speed with which brain death will occur. Therefore, this anecdotal evidence does not conflict with Dr. Antognini's testimony and therefore does not create a factual dispute.[9]

The Record establishes that the use of nitrogen gas will not act faster than pentobarbital. Therefore, nitrogen gas will not significantly reduce the risk of suffering Plaintiff faces if he is executed under Missouri's current protocol.

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[9] Plaintiff has also provided a "Preliminary Draft" of a document prepared at the request of an Oklahoma State Representative. (Doc. 199-12, pp. 15-28.) The authors' qualifications to opine on medical matters are not established. The report bears the instruction "Do Not Cite." The report generally discusses the feasibility and effectiveness of using nitrogen gas in executions, but it does not purport to answer the questions relevant to the case. For these reasons, this report also does not create a factual dispute.

III. CONCLUSION

For the reasons set forth above, Defendants' Motion for Summary Judgment on Count I is **GRANTED.**

IT IS SO ORDERED.

/s/ Beth Phillips
BETH PHILLIPS, JUDGE
UNITED STATES DISTRICT COURT

DATE: June 15, 2017

IN THE UNITED STATES DISTRICT COURT FOR THE
WESTERN DISTRICT OF MISSOURI
WESTERN DIVISION

RUSSELL BUCKLEW,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Case No. 14-8000-CV-W-BP
	)	
GEORGE A. LOMBARDI, *et al.*,	)	
	)	
Defendants.	)	

ORDER AND OPINION DENYING PLAINTIFF'S MOTION TO ALTER OR AMEND JUDGMENT

On June 15, 2017, the Court granted summary judgment to Defendants on the sole remaining claim from the Fourth Amended Complaint. (Doc. 202.) In that claim, Plaintiff asserted that the State's execution protocol as applied to him would violate the Eighth Amendment's proscription against cruel and unusual punishment. Plaintiff has now filed a Motion to Alter or Amend Judgment pursuant to Rule 59(e). "Rule 59(e) motions serve the limited function of correcting manifest errors of law or fact or to present newly discovered evidence." *United States v. Metropolitan St. Louis Sewer Dist.*, 440 F.3d 930, 933 (8th Cir. 2006). Plaintiff does not seek to present newly discovered evidence. Instead, he contends the Court (1) overlooked certain facts, (2) applied the wrong legal standard, and (3) limited discovery in a manner that deprived him of a fair opportunity to support his claims. The Court discusses each of these issues below and concludes the motion, (Doc. 210), should be **DENIED**.

I. BACKGROUND

Placing Plaintiff's arguments in context requires a summary of the law governing Plaintiff's claim and the basis for the Court's June 15 Order. As the Court explained,

> a prisoner alleging that a particular form of execution is cruel and unusual within the meaning of the Eighth Amendment must first establish that the method to be utilized presents a risk that is sure or very likely to cause serious illness and needless suffering, and give rise to sufficiently imminent dangers. The prisoner must then "identify a known and available alternative method of execution that entails a lesser risk of pain, a requirement of all Eighth Amendment method-of-execution claims. The alternative must be feasible, readily implemented, and in fact significantly reduce the substantial risk of severe pain.

(Doc. 202, p. 6 (quotations and citations omitted).) The current execution protocol calls for "the intravenous administration of pentobarbital in dosages sufficient to cause unconsciousness and eventually death." (Doc. 202, p. 3.) Plaintiff suffers from a congenital medical condition known as cavernous hemangioma, which "causes clumps of weak, malformed blood vessels and tumors to grow throughout his body, including his head, face, neck and throat." (Doc. 202, p. 2.) He alleges that his condition makes it difficult to breathe and that after the pentobarbital takes effect he will experience a choking sensation even after he is unconscious because he will be unable to control his breathing.

In granting Defendants' summary judgment the Court concluded that the Record, construed in the light most favorable to Plaintiff, demonstrated that there is a risk that Plaintiff will experience choking and an inability to breathe for fifty-two to 240 seconds – the time between unconsciousness and brain death. (Doc. 202, pp. 4-5, 8-9.) The Court then considered whether Plaintiff's proposed alternative – nitrogen gas – would "cause Plaintiff to become unaware of his choking and breathing difficulties sooner than he would under the current protocol, and (2) whether that difference in time is sufficient to permit the Court to find that nitrogen gas will make a 'significant' difference in Plaintiff's suffering." (Doc. 202, p. 10.) The Court reviewed the evidence in the Record and determined that the uncontroverted facts demonstrated that hypoxia induced by nitrogen gas "will not act faster than pentobarbital.

Therefore, nitrogen gas will not significantly reduce the risk of suffering Plaintiff faces if he is executed under Missouri's current protocol." (Doc. 202, p. 12.)

II. DISCUSSION

A. Factual Matters

Plaintiff contends that the Court erred by failing to contrast the effect of him being in a supine position under the State's current execution protocol evidence with his ability to be seated if he is executed with nitrogen gas. As the Court noted, Plaintiff has difficulty breathing, "and that difficulty is exacerbated when he is in a supine position." (Doc. 202, p. 3.) However, there is no evidence in the Record establishing that (1) Plaintiff must be in a supine position after the IV is inserted, or, more importantly, that (2) sitting while nitrogen gas is administered will make an appreciable difference in Plaintiff's ability to breathe. As the Court explained, "the premise for Plaintiff's claim is that there is a period between unconsciousness and brain death during which he will experience pain" because he will be unable to control his breathing and prevent choking. (Doc. 202, p. 11.) Plaintiff does not identify any overlooked evidence establishing that he must remain on his back after the IV is inserted.

He also does not identify any overlooked evidence that there is a significant difference in his ability to breathe when he is unconscious and sitting as compared to when he is unconscious and lying down. To the contrary, as the Court explained, there is no evidence in the Record establishing that nitrogen gas will cause brain death sooner than pentobarbital, which means that with nitrogen gas Plaintiff could be aware that he is choking for up to four minutes, just as the Record (construed in Plaintiff's favor) suggests would be the case with pentobarbital. (Doc. 202, p. 11.) Thus, even if he could not sit upright after the IV is inserted, there is no evidence suggesting this would cause suffering that would be alleviated through the use of nitrogen gas.

Plaintiff also contends the Court misinterpreted an Interim Report from a Grand Jury in Oklahoma, which heard testimony from a professor that "high altitude pilots who train to recognize the symptoms of nitrogen hypoxia in airplane depressurizations do not report any feelings of suffocation, choking, or gagging." (Doc. 192-14, p. 78.) The Court noted this information and observed that "[a]ssuming this is competent evidence that can be considered on summary judgment, Plaintiff is not trained to recognize the symptoms of nitrogen hypoxia and it is unlikely that the pilots who were trained to recognize the symptoms of hypoxia also suffered from cavernous hemangioma." (Doc. 202, p. 12.) Plaintiff argues that the Court misapprehended the point of this information, which was to establish that even pilots trained to recognize nitrogen hypoxia do not report choking or suffocation, so it is unlikely that Plaintiff would notice such effects. With this explanation, Plaintiff is correct that his lack of training is not relevant. However, Plaintiff has not overcome the Court's concerns that a professor's testimony to a grand jury about what pilots have reported is not competent medical evidence about the effects of nitrogen hypoxia. Relatedly, it remains unlikely that the pilots suffered from cavernous hemangioma, so their anecdotal reports are not sufficient to satisfy Plaintiff's burden.

Plaintiff's claim required evidence establishing that nitrogen hypoxia produces a shorter time between unconsciousness and brain death than would pentobarbital. There is no such evidence in the Record. There is, however, evidence that the time between unconsciousness and brain death (whatever that interval is) would be the same under both execution methods. Accordingly, there is no basis in fact for altering the Court's judgment.

B. Interpretation and Application of the Legal Standard

Plaintiff contends the Court has "imposed an impossible standard on Plaintiff" because his unique medical condition makes it impossible for him to produce the "side-by-side

comparison between the length of time required to produce unconsciousness by lethal injection versus lethal gas." (Doc. 210, p. 5.) He also believes he was "penalize[d] . . . because his expert would not opine on how to kill Plaintiff with lethal gas." (*Id.*) While Plaintiff argues against the legal standard utilized by the Court, he does not contend that it was wrong. That is, Plaintiff does not argue that the Court failed to follow the governing standard as set forth in such cases as *Glossip v. Gross*, 135 S. Ct. 2726 (2015), and *Bucklew v. Lombardi*, 783 F.3d 1120 (8th Cir. 2015) (en banc), and thus has not demonstrated that the Court committed legal error.

C. Discovery Issues

Early in the discovery process, the Court issued an Order Regarding the Scope of Discovery. (Doc. 105.) Plaintiff contends that his "ability to prove his Eighth Amendment claim has been crippled by" limits on access to information about and from members of the execution team. (Doc. 210, p. 6.) The Court addressed the issue in the order regarding the scope of discovery, as well as at other times, (*e.g.*, Doc. 183; Doc. 214), and further discussion of the issue is unnecessary.

III. CONCLUSION

For these reasons, Plaintiff's motion for relief pursuant to Rule 59(e) is **DENIED**.

IT IS SO ORDERED.

/s/ Beth Phillips
BETH PHILLIPS, JUDGE
UNITED STATES DISTRICT COURT

DATE: August 21, 2017

IN THE UNITED STATES DISTRICT COURT FOR THE
WESTERN DISTRICT OF MISSOURI
WESTERN DIVISION

RUSSELL BUCKLEW,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Case No. 14-08000-CV-W-BP
	)	
GEORGE A. LOMBARDI, DAVID DORMIRE, and TROY STEELE,[1]	)	
	)	
Defendants.	)	

ORDER REGARDING SCOPE OF DISCOVERY

Plaintiff was convicted in state court of kidnaping, rape and murder, and was sentenced to death. He challenges Missouri's planned method of execution as applied to him, contending that the current lethal injection protocol will cause him needless suffering and pain in violation of the Eighth Amendment. At the Court's direction the parties filed briefs regarding the scope of discovery, and the parties' positions conflict in certain respects.

The Court will confine the scope of discovery to the matters alleged in Count I of the Fourth Amended Complaint. This Order is intended to provide guidance regarding the proper scope of discovery.

I. BACKGROUND

A.

The scope of discovery is informed by the issues involved in the case, so the Court begins by describing Plaintiff's claim and the governing law. Plaintiff's remaining claim is Count I of the Fourth Amended Complaint. (Doc. 53; *see also* Doc. 63 (dismissing Counts II and III of the

[1] Troy Steele has succeeded Terry Russell as the Warden of the Eastern Reception, Diagnostic, and Correctional Center. Accordingly, Troy Steele is substituted as a Defendant in place of Terry Russell. Fed. R. Civ. P. 25(d). The Clerk of Court is directed to amend the Docket Sheet accordingly.

Fourth Amended Complaint).) As has been described in various orders, Plaintiff suffers from cavernous hemangioma, which is a congenital condition that causes clumps of weak, malformed blood vessels and tumors to grow throughout his body, including his head, face, neck and throat. These tumors are very susceptible to rupture. Plaintiff alleges that execution by lethal injection is likely to cause the tumors to rupture because lethal injection depends on the circulatory system, and that the ruptures can increase his pain and suffering because (1) the chemicals will not travel through his body in the manner intended and (2) ruptured tumors in his throat can cause him to choke. The Fourth Amended Complaint does not allege that changing the lethal injection protocol will alleviate these risks; to the contrary, the allegations broadly relate to any method of lethal injection. The Fourth Amended Complaint alleges that execution by lethal gas will significantly reduce the risk that tumors will rupture and will not cause the needless suffering associated with an execution method that relies on his compromised circulatory system.

In declining to dismiss this claim, the Court held that Plaintiff's allegations satisfied the pleading requirements set forth in *Glossip v. Gross*, 135 S. Ct. 2726 (2015). There, the Supreme Court described its prior holdings as establishing that a plaintiff must establish "a substantial risk of serious harm, an objectively intolerable risk of harm that prevents prison officials from pleading that they were subjectively blameless for purposes of the Eighth Amendment." 135 S. Ct. at 2737 (quotations omitted). A plaintiff must then "identify an alternative that is feasible, readily implemented, and in fact significantly reduces a substantial risk of severe pain." *Id.* (quotation omitted). *Glossip*'s holding is similar to the Eighth Circuit's prior decision in *Zink v. Lombardi*, where the Court of Appeals held that "to establish a constitutional violation, an inmate ultimately must prove that another execution procedure exists that is feasible and readily

implemented, and that the alternative method will significantly reduce a substantial risk of severe pain." 783 F.3d 1089, 1103 (8th Cir.) (en banc), *cert. denied*, 135 S. Ct. 2941 (2015).

B.

Plaintiff has proposed discovery be conducted in six broad categories: the execution protocol, the lethal chemicals utilized, the execution team, alternative methods of execution, DOC policies and procedures, and "Fact and/or Expert Witnesses." Specific topics are set forth within each category. In addition, Plaintiff intends to "depose all medical members of the execution team and the protocol team" as well as all fact and expert witnesses (among others). Plaintiff also indicates he "may request" an opportunity inspect the execution chamber.

Defendants contend that discovery should be conducted in phases. They propose that the first phase be limited to the feasibility of lethal gas as a method of execution, the likelihood that lethal gas will decrease the risk of pain, and matters related to Defendants' statute of limitations defense. Defendants intimate there would then be an opportunity for them to seek summary judgment, reasoning that if Plaintiff cannot prevail on the issues involved in the first discovery phase there is no need to conduct further discovery. Should Plaintiff demonstrate at least a triable issue that his claim is not time-barred and that lethal gas is feasible and will significantly decrease the risk of pain and suffering, discovery can proceed to the second phase. At that time, discovery regarding Plaintiff's medical condition and the effects of lethal injection can be conducted. Finally, Defendants contend that many subjects described in Plaintiff's discovery plan are unnecessary in light of the issues to be resolved.

II. DISCUSSION

A.

For ease of discussion, the Court first addresses Defendants' proposal to conduct phased discovery. The Court is not persuaded that phased discovery will prove beneficial. In remanding this case, the Eighth Circuit suggested that "[t]he District Court will have the usual authority to control the order of proof, and if there is a failure of proof on the first element that it chooses to consider, it would not be an abuse of discretion to give judgment for defendants without taking further evidence." *Bucklew v. Lombardi*, 783 F.3d 1120, 1128 (8th Cir. 2015) (en banc) (quotation omitted). The Court now has the benefit of the Fourth Amended Complaint, and the issues it presents suggests that parsing out some issues for discovery and reserving others will not be useful. For instance, Defendants suggest that Phase 1 include discovery related to the likelihood that lethal gas will significantly reduce the risk of unnecessary pain and injury to Plaintiff. However, determining the extent to which lethal gas will reduce that risk requires consideration of the effect of lethal gas on Plaintiff given his medical condition – and Defendants suggest that discovery about Plaintiff's condition be postponed until Phase 2. Similarly, determining whether any reduction in pain and suffering is "significant" – a matter Defendants propose for Phase 1 – requires a comparison to the pain and suffering that is likely to occur through the use of lethal injection, but Defendants propose that discovery on this issue also be postponed until Phase 2.

The Court further believes that phased discovery may result in duplication of effort and prolong the ultimate resolution. For instance, if discovery occurs in phases, witnesses may have to be deposed twice: first to discuss lethal gas, then again to discuss lethal injection. Defendants' proposal also raises the potential of multiple "rounds" of dispositive motions, one after each

phase of discovery. Finally, discovery is currently scheduled to close by the end of this year, and dispositive motions are to be filed by the end of January 2017. (Doc. 79, ¶¶ 5, 7.) Even if these deadlines are extended for some reason, the Court doubts that phased discovery would expedite the ultimate resolution of this case, particularly given that the scope of discovery will not be as broad as Plaintiff contemplates. (*See* Part II.B, *infra*.) For these reasons, the Court is disinclined to require that discovery be conducted in phases.

B.

The scope of discovery is limited to nonprivileged matters[2] that are "relevant to any party's claim or defense and proportional to the needs of the case, considering" a variety of factors. Fed. R. Civ. P. 26(b)(1). In light of Plaintiff's proposal, the most problematic factors are "the importance of the issues at stake in the action [and] the importance of the discovery in resolving the issues," *id.*, because these considerations demonstrate Plaintiff's planned scope for discovery is overly broad.

As noted earlier, Plaintiff has proposed discovery be conducted in six broad categories, with each category containing specific topics. The Court's discussion is organized around these six categories.

1. Execution Protocol – Plaintiff anticipates requesting documents relating to the development and adoption of the current protocol, research regarding the chemicals to be used, the effects of those chemicals on the human body, documents concerning alternative lethal injection protocols that were researched or considered, and "documents concerning the complete execution protocol, including all phases of the execution, from the arrival of the team at the facility to the documentation and disposal of the lethal chemicals." (Doc. 100, p. 7.) Some of

[2] The Court does not offer an opinion regarding Defendants' claim of privilege because, as Defendants concede, "[p]rivilege analysis is beyond the scope of" the parties' briefing, (Doc. 102, pp. 6), and because the issue is best addressed in the context of a specific discovery request.

this information is relevant to the issues in the case. For instance, Plaintiff is entitled to discover the execution protocol that Defendants intend to employ, including the chemicals to be used and the manner in which the chemicals will be administered. Plaintiff is also entitled to obtain any information Defendants may have regarding the chemicals' effects on the human body. However, information relating to "the documentation and disposal of the lethal chemicals" is not related to Plaintiff's claims. Similarly, information related to other methods of lethal injection that might have been considered by DOC is not relevant because Plaintiff does not claim use of different chemicals is a viable alternative: not only is this revealed by the Fourth Amended Complaint, but he admits that he "has alleged that any execution by lethal injection poses unacceptable and unconstitutional risks to him . . . ." (Doc. 100, p. 6.) Finally, "documents about the development and adoption of the current lethal injection protocol, including each protocol developed since 2013 and all amendments and changes," (Doc. 100, p. 7), are not relevant to any issues in the case. The current protocol is relevant, but prior protocols and the evolution of the process over time are not relevant.

Plaintiff justifies discovery about alternative chemicals and further details about the process to guard against Defendants contending that lethal injection is the only available and viable method of execution. In that event, Plaintiff wishes to conduct broad discovery to "seek[ ] ways that changes or alterations not previously known or contemplated might significantly reduce the risks to Mr. Bucklew and, hence, achieve compliance with the Constitution." (Doc. 100, p. 6.) However, the only alternative method Plaintiff has pleaded is execution by lethal gas – he has not alleged that changes to the lethal injection protocol or the use of different chemicals will "achieve compliance with the Constitution." To the contrary, he has disclaimed the possibility that any utilization of lethal injection will reduce the risk of pain and suffering.

The Fourth Amended Complaint does not justify wide-ranging scrutiny into matters unrelated to his claims.[3] This conclusion is not only supported by Rule 26 generally, but by the pleading requirements set forth in *Glossip* and *Zink*. As the Eighth Circuit explained, "[t]he existence of . . . an alternative method of execution . . . is a necessary element of an Eighth Amendment claim, and this element – like any element of a claim – must be pleaded adequately." *Zink*, 783 F.3d at 1103. Moreover, a general allegation "that other methods would be constitutional, devoid of further factual enhancement, fails to state a claim under the Eighth Amendment." *Id.* Here, Plaintiff has not even made a general allegation that changes to the lethal injection process would be constitutional – he has instead denied that any changes can be made. Thus, he has not presented an Eighth Amendment challenge that justifies exploring intricate details of the lethal injection protocol in order to determine if changes can be made.

2. Lethal Chemicals – Plaintiff seeks a list of the chemicals utilized by the State to execute inmates, and the Court agrees Plaintiff is entitled to discover the chemicals that the State intends to use. Plaintiff is also entitled to obtain packaging, labeling, and other inserts to the extent that they describe the chemicals' contents or their effects on the human body (including warnings), although the name of the manufacturer or provider can be redacted.

Plaintiff would seek documents relating to the purchase, procurement, prescriptions, attempts to obtain chemicals, the DOC's inventory and expiration dates, and the method of maintaining, storing and securing lethal chemicals. None of this information is relevant to Plaintiff's claim.

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[3] Plaintiff also points to the Court's prior observation that "'if discovery reveals the availability or feasibility of a different, as-yet unpleaded method, there are procedures to deal with such an eventuality.'" (Doc. 107, p. 3 (quoting Doc. 52, p. 10).) The Court did not intend this statement to permit Plaintiff to conduct discovery beyond the bounds set by the pleadings.

3. Execution and Protocol Teams (Medical and Non Medical) – This category seeks information about the individuals who will participate in or conduct the execution. Plaintiff explains that "given the severity of his medical condition, the training and qualifications of the execution team members are especially important, as the risks of a botched or excruciating execution are particularly great in his case." (Doc. 100, p. 6.) However, his remaining claim does not allege that changing the execution team members will significantly decrease the risk of pain and suffering, so the relevance of this information is not evident. This information might have been relevant to Count II,[4] but Count II was dismissed. The Court holds that detailed discovery about the execution team members is unnecessary to resolving the issues in this case. Plaintiff may obtain, as part of the discovery regarding the execution protocol, information generally describing the composition of the team (*e.g.*, the number of doctors, nurses, anesthesiologists) as well as the functions they will perform. Finally, in light of the lack of a relationship between the execution team members and the specifics of Plaintiff's claim, the Court discerns no need for Plaintiff to learn the identities of, or depose, the execution team members.

4. Alternative Methods of Execution – Within this category Plaintiff seeks documents regarding alternative methods of execution and further specifies that the scope of this category includes, but is not limited to, lethal gas. Information related to lethal gas is clearly relevant because Plaintiff has alleged that lethal gas is a viable and available alternative and a basis for believing that lethal gas will significantly decrease the risk of pain and suffering. However, it is the only alternative method he has alleged, so it is the only method for which discovery is justified and the breadth of this category must be limited accordingly.

---

[4] Count II alleged, among other things, that executing Plaintiff would violate the Constitution because there was "no contingency plan in the event the lethal drugs fail to kill Mr. Bucklew" and there was no training of personnel or contingency plans in place to address the possibility of a "botched execution." (Doc. 53, ¶¶ 155-57.)

5. DOC Policies and Procedures – The topics in this category relate to DOC policies for obtaining or using lethal chemicals, as well as documents relating to the training of execution team members. To the extent that "prescribing, administering, or using" lethal chemicals relates to the protocol, this information has been addressed in the context of other categories. The remaining respects are beyond the proper scope of discovery for this case. Plaintiff's claim does not depend upon how or from where the chemicals are procured, nor does it depend on the execution team's training. Therefore, discovery into these issues is unnecessary.

6. Fact and/or Expert Witnesses – This category seeks findings and conclusions from fact and expert witnesses, and other information that must be disclosed pursuant to Rule 26(a)(2). Obviously, the parties must comply with Rule 26(a)(2). It is not clear what else this category encompasses, so the Court cannot comment further.

III. CONCLUSION

For the reasons set forth above, the Court denies Defendants' request that discovery be conducted in phases. Moreover, the scope of discovery shall be limited to the claim and theory advanced in Count I of the Fourth Amended Complaint, as set forth more fully in Part II.B of this Order.

IT IS SO ORDERED.

/s/ Beth Phillips
BETH PHILLIPS, JUDGE
UNITED STATES DISTRICT COURT

DATE: August 11, 2016

IN THE UNITED STATES DISTRICT COURT FOR THE
WESTERN DISTRICT OF MISSOURI
WESTERN DIVISION

RUSSELL BUCKLEW,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Case No. 14-8000-CV-W-BP
	)	
GEORGE A. LOMBARDI, *et al.*,	)	
	)	
Defendants.	)	

ORDER GRANTING IN PART AND DENYING IN PART PLAINTIFF'S MOTION TO COMPEL

This is a civil rights lawsuit, brought by a condemned inmate. Plaintiff contends that the State's method of execution as applied to him violates the Eighth Amendment because of his unique medical condition. More specifically, Count I of the Fourth Amended Complaint alleges that given his circulatory and related disorders, execution through lethal injection poses a risk of severe pain and suffering that can be alleviated if he is executed through the use of lethal gas. Counts II challenged the staffing and procedures to be employed during the execution and Count III asserted Plaintiff's First Amendment rights were violated because he was not provided information about the source of the chemicals to be used in the execution. These two claims were dismissed. (Doc. 63, pp. 14-16.)

Early in the discovery process, the Court issued an Order Regarding Scope of Discovery ("the Scope Order"). (Doc. 105.) The Order discussed broad categories and determined that some were proper subjects of discovery and some were not.

Shortly before the discovery deadline of March 10, 2017, Plaintiff contacted the Court to seek resolution of outstanding discovery disputes. A telephone conference was held on March 15, 2017, ("the March 15 conference"), following which the Court, *inter alia*, directed Plaintiff

to file a Motion to Compel. (Doc. 163, pp. 1-2.) The parties were also directed to provide any related written discovery requests and the corresponding answers/objections.

The Motion to Compel, (Doc. 169), is fully briefed. It raises issues regarding (1) Plaintiff's request to elicit further information related to, or depositions of, members of the execution team (particularly M2 and M3), (2) Defendants' provision of a privilege log, and (3) Defendants' efforts to fully search e-mails for responses to the discovery requests. The Court has considered the parties' written arguments, the discovery requests, and the comments made during the March 15 conference. In light of these materials, the pleadings, and the Court's prior Orders (including the Scope Order), the Court resolves the parties' arguments as discussed below.

I. Additional Information About Members of the Execution Team

Plaintiff contends that Defendants should be required to provide additional information about the members of the execution team. Specifically, Plaintiff wants information about the team members' training and experience, as well as access to depositions of team members taken in other cases that are the subject of Protective Orders issued in those cases. Defendants contend that this information is not relevant in light of Plaintiff's remaining claim. Consistent with its prior rulings, the Court agrees with Defendants that this information exceeds that which is necessary in light of Count I's allegations.

The Court's explanation begins with the Fourth Amended Complaint, and in particular the differences between Count I (the only remaining claim) and Count II (which has been dismissed). Count I alleges that the use of lethal injection violates the Constitution because of Plaintiff's cavernous hemangioma and related complications. Plaintiff does not contend that using different chemicals, or administering chemicals in a different way, will diminish the risk of

pain and suffering. According to Count I, the only way to significantly diminish the pain and suffering resulting from lethal injection is to execute Plaintiff with lethal gas. In contrast, Count II alleged that Plaintiff "will experience pain and suffering unless certain changes are made in the lethal injection protocol, and the failure to make these changes constitutes a deliberate indifference to his serious medical needs in violation of the Eighth Amendment." (Doc. 63, p. 14.) The Court dismissed Count II because the Fourth Amended Complaint did not "allege sufficient facts to indicate that the staffing and planning procedures Defendants intend to utilize will create a substantial risk of serious harm" and "does not allege what procedures should be employed (other than not performing an execution)." (Doc. 63, pp. 14-15.)

The differences in the allegations (and fates) of Counts I and II formed the basis for several decisions in the Scope Order, including the Court's decision regarding information about the execution team. The Scope Order's discussion of the issue is set forth below:

> Plaintiff explains that "given the severity of his medical condition, the training and qualifications of the execution team members are especially important, as the risks of a botched or excruciating execution are particularly great in his case." (Doc. 100, p. 6.) However, his remaining claim does not allege that changing the execution team members will significantly decrease the risk of pain and suffering, so the relevance of this information is not evident. This information might have been relevant to Count II, but Count II was dismissed. The Court holds that detailed discovery about the execution team members is unnecessary to resolving the issues in this case. Plaintiff may obtain, as part of the discovery regarding the execution protocol, information generally describing the composition of the team (*e.g.*, the number of doctors, nurses, anesthesiologists) as well as the functions they will perform. Finally, in light of the lack of a relationship between the execution team members and the specifics of Plaintiff's claim, the Court discerns no need for Plaintiff to learn the identities of, or depose, the execution team members.

(Doc. 105, p. 8 (footnote omitted).) Thus, the additional information Plaintiff now seeks is barred by the Scope Order.

Plaintiff contends that the Scope Order should be amended because his claim requires he prove that the execution protocol presents a substantial risk of serious harm and that an alternative method of execution will significantly reduce that risk. However, the substantial risk of serious harm that forms the basis for Count I does not depend on the execution team's training and experience. For instance, while Count I alleges that the execution protocol will cause him to hemorrhage, cough, choke and suffocate, thereby suffering an "excruciating execution," it does not allege that this risk is due to the execution team's training or expertise. Count I also does not allege that more or different training will decrease these risks.

Relatedly, Plaintiff contends that information about the individuals involved in his execution – including their training – is relevant "because during various depositions in this case, Defendants made clear that there are various unwritten and/or informal protocols that Defendants and the execution team rely upon to carry out an execution – many of which are contingent on the degree of training of the medical team members." (Doc. 169, p. 10.) As an example, it may be necessary to utilize a central line or a cutdown procedure, and Plaintiff wants to explore the execution team members' qualifications for performing these procedures. However, this explanation is no different than the explanation Plaintiff originally offered prior to entry of the Scope Order, and it remains the case that Plaintiff's claim does not depend upon either the manner in which a lethal injection is performed or the qualifications of the execution team members. Discovery is appropriate to determine how a central line or a cutdown procedure affects the risk of pain and suffering Plaintiff has identified. However, Plaintiff's claim does not depend on "how well qualified" the execution team is.

Finally, Plaintiff suggests that the execution team's qualifications and training are at issue because some information on these topics has been divulged during discovery. (Doc. 169, pp. 3-

4; *see also* Doc. 164, pp. 13-14.) The Court does not agree that mere discussion of or reference to a topic during discovery makes further discovery on that matter appropriate. There is no claim remaining that requires consideration of the execution team's qualifications and training, so the Court concludes that the Scope Order sets proper limits on discovery. Plaintiff's request for additional details about the execution team members and access to their depositions from other cases is denied.

II. Privilege Log

Plaintiff served Interrogatories and a Request for Production of Documents ("RFP") in November 2016. Defendants responded in December 2016.[1] In most respects, Defendants' responses (1) raised "non-privilege based" objections, including objections based on vagueness, temporal scope, or perceived violations of the Scope Order, (2) reserved various privileges depending on how the other objections were resolved, (3) provided responsive documents, or (in some cases) (4) described documents that were privileged. The parties discussed Defendants' objections but did not agree on a resolution.

In presenting the issues to the Court at this juncture, Plaintiff focuses on Defendants' claims of privilege and argues the Defendants have not provided a privilege log as required by Rule 26(b)(5). Defendants rely on Rule 34(b)(1)(C) to contend that their obligation was fulfilled so long as they "explicitly identified in the discovery response (and production log) if a relevant privileged record communication was withheld and explained the basis for that privilege." (Doc. 173, p. 16.) The Court disagrees with Defendants and concludes that Rule 26(b)(5)(ii) – which specifically describes the contents of a privilege log – controls.

[1] The discovery requests issued to each Defendant are similar, as are the responses. Plaintiff has supplied the requests posed to Defendant George Lombardi (and his responses) to represent all of the requests and responses.

However, a privilege log is required only "[w]hen a party withholds information *otherwise discoverable*," Fed. R. Civ. P. 26(b)(5)(A) (emphasis supplied), and with Defendants' other objections unresolved it has not been established that Defendants are withholding any discoverable information because it is privileged. Thus, before addressing Defendants' obligations under Rule 26(b)(5), the Court must determine whether anything Plaintiff has not been provided is discoverable.

Interrogatory #1 asks Defendants to identify all policies and protocols that apply to execution by lethal injection. Defendants provided the current written execution protocol, and Plaintiff is not entitled to anything further.[2] Defendants also suggest a "closed portion" of the protocol is not being disclosed pursuant to § 546.720 of the Revised Missouri Statutes, which relates to identification of members of the execution team; this is sufficient to identify what has been withheld and is functionally equivalent to the information required by Rule 23(b)(5).

Interrogatory #2 asks for policies and protocols related to execution by lethal gas. Defendants initially answered this interrogatory by stating that the Department of Corrections ("DOC") "does not use lethal gas and has no lethal gas protocol." In a Supplemental Response (made after the parties conferred), Defendants pointed out that the DOC last utilized lethal gas for an execution in 1965. Plaintiff's explanation as to why the protocols and procedures from 1965 are pertinent are not persuasive, and the Court agrees with Defendants that it exceeds the needs of this case for them to ascertain the protocols for a procedure last used in 1965. The Court further notes that Defendants did not assert any privileges in their response to this interrogatory, so there are no privilege issues to be considered.

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[2] At least, it *appears* from the text of Defendants' answers that they provided the current written execution protocol. The Court does not know what documents are identified by the specified Bates Numbers. Regardless, the current written execution protocol *should* be provided to Plaintiff, and the Court's rulings presume this has occurred.

Interrogatory #3 asks for several categories of information related to the chemicals used during a lethal injection. The Court concludes that much of the information sought is unnecessary given the claim that remains in the case. Plaintiff's claim does not depend on "the manner in which the chemicals are prepared and administered" or "the process and reasoning behind the selection of those particular chemicals and their respective doses." Therefore, this information need not be provided; and, given that the only privileges asserted relate to these matters, there is no need for Defendants to prepare a privilege log. Plaintiff is entitled to information that identifies the chemicals to be used, the doses, and "any risks, side-effects, or complications that could arise from their use." However, Defendants supplied information identifying the chemicals to be used and the manner in which they will be administered. Defendants also stated that they lack the medical training necessary to offer their own opinions about possible risks, side effects and complications, and they have no documents addressing these issues. Thus, Plaintiff has received answers to the portions of Interrogatory #3 to which he is entitled.

Interrogatory #4 is similar to Interrogatory #3 in that it asks Defendants to describe the chemicals that are, or might be, used by DOC when using lethal gas as the means of execution. Defendants stated that there are currently no such chemicals, and consistent with its ruling regarding Interrogatory #2 the Court is not convinced that the chemicals used in 1965 (or before) are relevant to this case. Nonetheless, Defendants' Supplemental Response states that DOC used cyanide gas, and Defendants are not required to speculate as to what chemicals would be used if DOC were to start utilizing lethal gas as a means of execution. For these reasons Defendants' response to Interrogatory #4 (including the Supplemental Response) provides all the information to which Plaintiff is entitled and nothing has been withheld based on a privilege.

Interrogatory #5 seeks "the process by which the current drug protocols were selected and included in the Execution Procedures," but the Scope Order already determined that this was not allowed. (Doc. 105, p. 6-7.) Therefore, Defendants need not document their claims of privilege.

Interrogatory #6, which asks Defendants to identify all documents "related to the viability or feasibility of lethal gas as an execution method in Missouri," is addressed not only by Defendants' initial response and Supplemental Response, but also by an e-mail, (Doc. 177-2), Defendants sent to the Court and to Plaintiff's counsel on March 30, 2017, ("the March 30 e-mail"). Initially, Defendants contended the request was overly broad in that it was not limited in time – an objection the Court believes was appropriate. Defendants also asserted attorney/client, work product, and deliberative process privileges. In the Supplemental Response, Defendants contended they do not have any responsive documents. The March 30 e-mail describes a search of the e-mails of all Defendants and of attorneys in the DOC's general counsel's office, using the search terms "lethal gas" and "gas chamber." The search uncovered six documents, and Defendants contend all are privileged as attorney/client communications or attorney work product.[3] The e-mail further identifies the six e-mails by date, author, recipient and subject matter. The Court concludes that the e-mail constitutes an adequate privilege log for the six documents referenced therein.

Interrogatory #7, Interrogatory #8, and Interrogatory #11 are similar to Interrogatory #1 in that they asks for details about particular steps in the lethal injection protocol. Defendants' responses to Interrogatory #7, Interrogatory #8 and Interrogatory #11 are similar to those they provided for Interrogatory #1; the Court's ruling is the same as well.

[3] Plaintiff references the March 30 e-mail in his Reply Suggestions, but presents no argument suggesting that the documents identified therein are not privileged.

Interrogatory #9 essentially asks Defendants to identify roles, responsibilities and functions of the execution team members. Notwithstanding Defendants' various objections they have supplied this information. Moreover, what Defendants has supplied is consistent with the Scope Order, (*see* Doc. 105, p. 8), and the Court's discussion in Part I of this Order. The only privileged information withheld is the names of the execution team members, and as discussed in the context of Interrogatory #1 the information supplied satisfies Defendants' obligations under Rule 26(b)(5).

Interrogatory #10 is similar to Interrogatory #9, but it asks for identification of members of the execution team if execution is performed through the use of lethal gas. The fact that DOC does not utilize lethal gas in executions answers this question. The Court further notes that Defendants did not assert any privileges in their response to this interrogatory, so there are no privilege issues to be considered.

Interrogatory #12 is similar to Interrogatory #2 in that it asks about the process by which an inmate would be executed through the use of lethal gas. Defendants' answer is similar to that which was provided for Interrogatory #2, and the Court's ruling is the same as well.

Interrogatory #13 asks for detailed information about the execution team members' training. This issue has been addressed by the Scope Order, (Doc. 105, p. 8), and the discussion in Part I of this Order.

Interrogatory #14 asks for all "contingency plans that exist for when any complications arise during an execution by lethal injection." Plaintiff has been supplied the DOC's execution protocol, so Plaintiff has been supplied all formalized contingency plans for anticipated complications. Obviously, there might be unanticipated complications – but there is no way for Defendants to describe contingency plans for events that are not anticipated. And, a request for

all unwritten contingency plans is too vague. The Court concludes Defendants have answered this interrogatory by providing the DOC's execution protocol. The Court further notes that Defendants did not assert any privileges in their response to this interrogatory (other than one related to the identification of the execution team members), so there are no privilege issues to be considered.

Interrogatory #15 asks for contingency plans for executions by lethal gas; Defendants respond that DOC does not perform executions by lethal gas, which answers the interrogatory. The Court further notes that Defendants did not assert any privileges in their response to this interrogatory, so there are no privilege issues to be considered.

Interrogatory #16 follows up on the preceding two interrogatories by asking if there are no contingency plans, why it is that none exist. Defendants' response explains that there are no contingency plans with respect to the use of lethal gas because DOC does not utilize lethal gas. While there are no responses purporting to explain the lack of additional contingency plans in the lethal injection protocol, the request is too vague and broad to be enforced. There are no objections to this response (based on privilege or otherwise), and there is no need for the Court make a further ruling.

Interrogatory #17 asks for information about "failed executions or executions that did not follow the applicable protocol in effect at the time . . . including any and all information related to why those executions failed and any steps or actions taken in response." Defendants posed an objection, noting (correctly) that this interrogatory exceeds the bounds set by the Scope Order. Then, notwithstanding its objection, Defendants answered that there have been no such executions. The Court deems this response sufficient, particularly in light of the restrictions set

in the Scope Order. The Court further notes that Defendants did not assert any privileges in their response to this interrogatory, so there are no privilege issues to be considered.

Interrogatory #18 would require Defendants to identify all persons responsible for monitoring Plaintiff's medical condition in the weeks before the execution, as well as information about such persons. Defendants presented a series of objections, one of which is based on relevance. The Court concludes this objection should be sustained. Plaintiff's claim is that (1) use of lethal injection – regardless of the chemicals utilized and regardless of the procedures utilized – will cause a serious risk of severe pain and suffering and (2) execution with lethal gas will significantly reduce this severe risk. Count II of Plaintiff's Fourth Amended Complaint alleged that Plaintiff's rights were violated because Defendant did not have a plan for taking necessary steps to assess Defendant before and during the execution, but the Court dismissed Count II. Interrogatory #18 might have been relevant to Count II, but it is not relevant to the sole remaining count.

Interrogatory #19 asks Defendants to identify all communications, records, or correspondence involving Plaintiff's medical condition, as well as his "physical or mental fitness for execution." Defendants present several objections, some of which are based on privilege and some of which are not. The Court does not find all of them applicable.

Defendants objected because the interrogatory is not specific as to time and because Plaintiff "is not currently under an active warrant of execution." These objections are overruled. The lack of a time frame does not make this request burdensome; Defendants can (and should) provide Plaintiff with all information they have about his medical condition. The Court also holds the fact that there is or is not currently a warrant of execution is no bar to providing the information.

IN THE UNITED STATES DISTRICT COURT

WESTERN DISTRICT OF MISSOURI

RUSSELL BUCKLEW,	)	
	)	
Plaintiff,	)	
	)	
vs.	)	Case No. 4:14-CV-8000-BP
	)	
GEORGE A. LOMBARDI,	)	
	)	
DAVID A. DORMIRE	)	
	)	
and	)	
	)	
TERRY RUSSELL,	)	
	)	
Defendants.	)	

RULE 26(a)(2) EXPERT REPORT

SUPPLEMENTAL EXPERT REPORT OF JOEL B. ZIVOT, M.D.

I, JOEL B. ZIVOT, being of sound mind and lawful age, hereby state under penalty of perjury as follows:

I. QUALIFICATIONS

A. Education

1. I received my Doctor of Medicine from the University of Manitoba, Canada, in 1988. From 1989–1993, I was a resident in Anesthesiology at the University of Toronto, Department of Post Graduate Medical Education, and from 1993–1995, I completed an additional residency in Anesthesiology and a Fellowship in Critical Care Medicine at the Cleveland Clinic Foundation, Department of Anesthesiology in Cleveland, Ohio.

B. Professional Licenses, Certifications and Memberships

1. I hold an active medical license from the State of Georgia and have held unrestricted medical licenses in Ohio, the District of Columbia, Michigan, and the Canadian provinces of Ontario and Manitoba. I also hold an active license to prescribe narcotics and other controlled substances from the federal Drug Enforcement Administration (DEA).

DEFENDANT'S EXHIBIT 2 Dr. Zivot Depo 3-8-17

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 137 of 200
BUCKLEW v. LOMBARDI et al.
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 137

2. I hold board certification in Anesthesiology from the Royal College of Physicians and Surgeons of Canada and the American Board of Anesthesiology. I am also board certified in Critical Care Medicine from the American Board of Anesthesiology.

C. Professional Experience

1. I have served as the Medical Director of the Cardio-Thoracic Intensive Care Unit and the Fellowship Director for Critical Care Medicine at Emory University Hospital. I am an Associate Professor of Anesthesiology and Surgery at the Emory University School of Medicine and an adjunct Professor of Law at Emory University Law School. A complete list of my qualifications and publications authored in the last ten years is provided in my curriculum vitae attached as Exhibit A to this report.

2. I have practiced anesthesiology and critical care medicine for 22 years, and, in that capacity, I have personally performed or supervised the care of more than 42,000 patients.

3. In the course of my career, I have regularly performed or supervised the anesthesia care of numerous patients whose airways would be termed "difficult" or "very difficult" according to the Mallampati Classification. Airway evaluation includes this prediction score on securing the airway, where Mallampati I is predicted to be straightforward and Mallampati IV is predicted to be very difficult.

4. I am, by reason of my experience, training, and education, an expert in the fields of anesthesiology and critical care medicine. The opinions that follow are within my field of expertise, and are stated to a reasonable degree of medical and scientific certainty unless otherwise noted.

5. A complete list of the cases in which I have given expert testimony is attached as Exhibit B to this report.

D. Compensation

1. My compensation in this matter is as follows: (1) expert fee of $400/hour; (2) 15 hours of record and document review, report writing, and consultation with counsel since October 2016; and (3) approximately 12 hours of travel and examination of Mr. Bucklew with an estimated cost of $3000.00.

IN RE: KIMBERLY BUCKLEW, et al. v. MDOC, et al.
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 138

II. SUBJECT OF OPINIONS

A. I have been asked by Mr. Bucklew's attorneys in the above-referenced case to render an expert opinion regarding the risks and complications stemming from Mr. Bucklew's deteriorating medical condition—specifically the growing obstruction in Mr. Bucklew's airway—on the execution of Mr. Bucklew by means of lethal injection.

B. As a medical doctor, I am ethically prevented from prescribing or proscribing a method of executing a person. I am bound by these ethics, and am prohibited from assessing whether a different form of execution would be feasible. Therefore, while I can assess Mr. Bucklew's current medical status and render an expert opinion as to the documented and significant risks associated with executing Mr. Bucklew under Missouri's current Execution Procedure, I cannot advise counsel or the Court on how to execute Mr. Bucklew in a way that would satisfy Constitutional requirements.

C. In developing my opinion, and in addition to the materials I reviewed in connection with my declaration dated May 8, 2014, I have considered the following: (1) The report of medical imaging performed at Barnes-Jewish Hospital dated December 23, 2016 [Exhibit C]; (2) Mr. Bucklew's December 19, 2016 MRI and CT imaging from Barnes-Jewish Hospital at Washington University in St. Louis Missouri [Exhibit D]; (3) my own in-person examinations of Mr. Bucklew conducted on May 12, 2014 and on January 8, 2017; (4) Mr. Bucklew's medical records; (5) the Missouri Department of Corrections Procedure for Execution (the "Execution Procedure"); and (6) the Declaration of Joseph F. Antognini dated November 8, 2016.

III. SUMMARY OF OPINIONS

A. Mr. Bucklew suffers from a debilitating, incurable, and progressive condition known as cavernous hemangioma. This condition occurs sporadically and congenitally in the population and not as a consequence of any action on the part of Mr. Bucklew. This condition has caused large diffuse, vascular (blood-filled) tumors to form and grow in Mr. Bucklew's nasal cavity, face, and throat. Cavernous hemangiomas in the nasal cavity, face, and throat are a medically recognized cause of death by suffocation.

B. As a result of the hemangiomas located in Mr. Bucklew's nasal cavity, face and throat, and to a lesser-degree residual scar tissue from a past tracheostomy procedure, Mr. Bucklew's airway is medically termed a "very difficult" airway. Specifically, on the Mallampati four-point scale, Mr. Bucklew's airway is a Mallampati class IV. It is highly likely that Mr. Bucklew, as a result of having a Mallampati class IV airway, would require a surgical airway (i.e., tracheostomy)

in order to safely undergo a surgical procedure requiring a general anesthetic.[1] Mr. Bucklew's airway is so compromised that it is highly unlikely that he could be safely intubated without experiencing a serious hemorrhagic event within his throat.

C. Because of the degree to which Mr. Bucklew's airway is compromised by the hemangiomas, the anatomical mechanics of airflow and breathing, and the particular psychological and physical effects of lethal injection, it is highly likely that Mr. Bucklew would be unable to maintain the integrity of his airway during the time after receiving the lethal injection and before death.

D. Contrary to Dr. Antognini's assertion, the effect of pentobarbital injection as outlined in the Execution Procedure is highly unlikely to be experienced as "rapid unconsciousness followed by death." In my professional medical opinion, the effects of such an injection are highly unlikely to be instantaneous and the period of time between receiving the injection and death could range over a few minutes to many minutes. My view here is supported both by my own professional knowledge of how chemicals of this type are likely to exert their effects in the body as well as by the terms of Missouri's Execution Procedure, which calls for a waiting period of five minutes after the first two pentobarbital injections, before examining the inmate to determine whether death has occurred. The Execution Procedure expressly acknowledges that the first two Pentobarbital injections may not have caused death within five minutes, in which case a second round of injections is required.

E. As a result of his inability to maintain the integrity of his airway for the period of time beginning with the injection of the Pentobarbital solution and ending with Mr. Bucklew's death several minutes to as long as many minutes later, Mr. Bucklew would be highly likely to experience feelings of "air hunger" and the excruciating pain of prolonged suffocation resulting from the complete obstruction of his airway by the large vascular tumor.

F. As a result of this prolonged experience of suffocation, it is highly likely that Mr. Bucklew will struggle to breathe — a struggle apparent as convulsive movements—and as a result, given the highly friable and fragile state of the tissue of Mr. Bucklew's mouth and airway, he will likely experience hemorrhaging and/or the possible rupture of the tumor. The resultant hemorrhaging will further impede Mr. Bucklew's airway by filling his mouth and airway with blood, causing him to choke and cough on his own blood during the lethal injection process. It is not necessary that Mr. Bucklew be fully conscious in order to experience the excruciating pain and feeling of prolonged suffocation. Also,

[1] Note that while I generally object to Dr. Antognini's comparison between the medical act of general anesthesia and the non-medical act of lethal injection, for the limited purpose of this opinion I refer to the necessity of a tracheotomy in order to undergo general anesthesia only as a frame of reference for the degree to which Mr. Bucklew's airway is compromised. In short, even in a room full of doctors, Mr. Bucklew could not safely lose consciousness by way of sedation without the immediate capability of performing a surgical airway.

regardless of whether Mr. Bucklew is fully conscious, bleeding in his mouth and throat will cause choking and coughing and the coughed blood will be visible to viewers of the execution procedure.

G. In summary, I conclude with a reasonable degree of medical and scientific certainty that it is highly likely that Mr. Bucklew, given his specific congenital medical condition, cannot undergo lethal injection without experiencing the excruciating pain and suffering of prolonged suffocation, convulsions, and visible hemorrhaging.

IV. OBJECTIVE FACTUAL BASES FOR OPINIONS

A. A patient's airflow during breathing will typically be described as either being laminar or turbulent. Laminar flow is a smooth, orderly, linear flow of air with low resistance and is experienced as "easy" breathing by the patient. Turbulent flow, by contrast, is disorganized, has high resistance, and is experienced by the patient as "difficult" breathing. Four factors impact whether airflow is laminar or turbulent: (1) aperture or diameter of the airway, (2) length of the airway, (3) velocity of the flow, and (4) density of the gas. Of these four factors, the most pertinent in this case is the aperture of the airway. The smaller or more obstructed a patient's airway becomes, the more turbulent the flow of air becomes. This aperture narrowing is experienced by the patient as an inability to easily breathe. When a patient feels as though he cannot take a breath, the usual reaction is to breathe harder and faster to take in more air. This triggers the third factor listed above: "velocity of the flow." The faster a patient breathes, the more turbulent the flow becomes, particularly through a narrow or obstructed airway.

B. Diameter of the airway, or aperture, can be further understood with reference to the Mallampati classification used to describe how "difficult" it is to secure an airway in the setting of a medical procedure. An airway can be difficult because of anatomical abnormalities, both congenital and acquired. In this case difficulty in maintaining airway patency is a direct consequence of cavernous hemangiomas in Mr. Bucklew's airway.

C. In clinical cases where a patient has a Mallampati IV airway, an anesthesiologist must proceed with extreme caution and implement specialized precautions, such as creating a surgical airway via tracheotomy, to maintain the integrity of the patient's airway in order to safely prepare a patient for any procedure where the patient is sedated and unable to assist in supporting his or her own ventilation. This is supported by Mr. Bucklew's own medical records, referenced by Dr. Antognini, in which it was noted that Mr. Bucklew underwent a tracheotomy in connection with surgical procedures under general anesthesia [Decl. of Antognini; PC486].

D. Cavernous hemangioma is a condition that results in vascular lesions consisting of abnormally dilated blood vessels. These blood vessels form cavern-like pockets, i.e. vascular tumors or hemangiomas, in which blood pools. The pockets then

leak, or hemorrhage, as a result of defects in the walls of the blood vessels. The lesions can vary in size, and are linked to varying side effects including seizures, stroke symptoms, hemorrhages, and headaches, depending upon the size and location of the particular lesion, and the relative strength of the walls of the affected blood vessels. In addition, symptoms may resolve or reappear over time as the vascular tumor changes in size as it leaks and reabsorbs blood.

E. While the vascular tumors are often benign, in certain cases, such as Mr. Bucklew's, the progressive condition is life-threatening as it eventually leads to obstruction of the patient's airway leading to asphyxiation and death.

V. RECORD EVIDENCE SUPPORTING OPINIONS

A. Historic Medical Records

1. Mr. Bucklew's medical records indicate that, since birth, he has suffered from cavernous hemangioma resulting in vascular tumor formations in his face, brain, and throat. [Bates PC202]. The specific hemangioma at issue affects Mr. Bucklew's nasal cavity, face, right eye, and airway approaching both the base of Mr. Bucklew's skull and his carotid artery. [PC202]. The location of Mr. Bucklew's hemangioma has resulted in a grossly enlarged uvula and narrowing of his airway resulting in generally turbulent air flow, which Mr. Bucklew experiences as shortness of breath or difficulty breathing.

2. Mr. Bucklew's condition is inoperable due to the severe risk of blood loss during surgery. Furthermore, due to the large size of the hemangioma, Mr. Bucklew's condition has been found to no longer be amenable to sclerotherapy [PC2257].

3. As a result of his condition, Mr. Bucklew has experienced "excruciating" pain and numerous hemorrhagic events, including bleeding from the face and mouth, necessitating emergency trips to the medical unit in which pressure with gauze was applied in order to slow the bleeding. [see e.g. PC2238, PC2227, PC2506].

4. As previously described in my Supplemental Declaration dated December 4, 2015, Mr. Bucklew's tumors are painful, easily bleed, and spontaneously hemorrhage. Mr. Bucklew has described past hemorrhages as sometimes "squirting" blood, while other times presenting as a "slow leak." [PC103].

5. Specifically with respect to Dr. Antognini's discussion of Mr. Bucklew's procedures between 2000 and 2003, Mr. Bucklew's records confirm that he underwent procedures in that time period that required general anesthesia. Records of a procedure that occurred in 2000, however, explicitly state that Mr. Bucklew received a tracheotomy, a procedure undertaken in cases of difficult airways for purposes of maintaining the

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 142 of 260
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 142

integrity of the airway while a patient is under anesthesia. [PC486]. Contrary to Dr. Antognini's apparent conclusion that Mr. Bucklew's airway does not warrant any special considerations, Mr. Bucklew's records show that special procedures were undertaken to account for Mr. Bucklew's difficult airway.

B. Findings of In-Person Examinations

1. The tumors obstructing Mr. Bucklew's airway are so large that Mr. Bucklew is no longer able to lie down flat on his back while sleeping without suffocating. On January 8, 2017, Mr. Bucklew explained that in order to breathe while sleeping, he must sleep on his right side with his head elevated at roughly a 45 degree angle. This position allows Mr. Bucklew to sleep without his airway becoming obstructed by the turn in his airway and his grossly enlarged uvula.

2. Even with the above precautions, Mr. Bucklew explained that his uvula occasionally gets "stuck" in his throat while he sleeps, causing him to wake up feeling as though he is choking and unable to breathe. In addition, the above precautions do not prevent Mr. Bucklew's tumors from leaking or hemorrhaging during the night. When asked to describe his typical morning, Mr. Bucklew explained that the first thing he does each morning is to clean off the blood on his face that leaked from his nose and mouth while he slept.

3. During my examination of Mr. Bucklew on January 8, 2017, I noted several large hemangiomas visible in Mr. Bucklew's hard and soft palate, lip, nose, and uvula. Of particular relevance to the aperture of Mr. Bucklew's airway were the grossly enlarged uvula and the easily visible hemangiomas on his hard and soft palates. Mr. Bucklew also has an easily visible hemangioma growing out of his upper lip and over his mouth. This tumor has enlarged in size since my prior examination of Mr. Bucklew.

4. In addition to the hemangiomas compromising Mr. Bucklew's airway, I also observed that Mr. Bucklew has residual scarring over the front of his throat caused by the past tracheostomy procedure. Mr. Bucklew explained that the scar tissue is tethered to his trachea in a way that makes it difficult to breathe and swallow. This scar tissue contributes to the obstruction of Mr. Bucklew's airway and increases the turbulence of the air flow through Mr. Bucklew's airway.

5. I also observed that Mr. Bucklew had residual loss of feeling in the right side of his face, causing him to be unable to completely close his right eye.[2]

[2] Dr. Antognini asserts, without having examined Mr. Bucklew, that Mr. Bucklew definitively has not suffered a stroke as a result of his condition. He bases his assertion on the fact that Mr. Bucklew "has recently been observed to

6. I also observed during my examination that Mr. Bucklew has very poor veins in both of his arms. Poor venous visualization suggests that establishing intravenous access in the setting of lethal injection will be potentially difficult, prolonged, and painful to Mr. Bucklew.

7. Also during my January 8, 2017 examination of Mr. Bucklew, I asked him to describe his experience during the MRI Procedure on December 19, 2016. He reported experiencing extreme discomfort during the procedure. In order to maintain the integrity of his airway while lying flat, Mr. Bucklew was forced to consciously alter his breathing pattern, and swallow repeatedly to keep his uvula from settling and completely obstructing his airway, in order to avoid choking.

8. Furthermore, as noted in my October 13, 2015 report, the tissue of Mr. Bucklew's airway has become increasingly fragile over time. In fact, Mr. Bucklew's airway is now so fragile that simply touching it causes the tissue to bleed. As most recently reported by Mr. Bucklew on January 8, 2017, the tissue bleeds so easily that it even bleeds while he is sleeping.

9. My finding that the tissue of Mr. Bucklew's airway is extremely fragile is not inconsistent with my suggestion that Mr. Bucklew undergo a clinical examination that would call for a bronchoscopy or use of a Glidescope. [Decl. Antognini, para. 17]. These procedures are intended to be minimally invasive, and a skillful physician would endeavor to insert the tube with an attached camera carefully into the airway without touching the fragile tissue. However, given Mr. Bucklew's present condition and its progressive nature, as of this date it is my professional medical opinion that Mr. Bucklew's airway is so compromised, and the tissue so fragile, that even the undertaking of a minimally invasive evaluation of his airway would pose very high likelihood of airway bleeding and subsequent loss of the airway that could be fatal.

10. As already described, Mr. Bucklew's condition is progressive. As of April 2012, Mr. Bucklew's medical records indicate that his condition did not appear to place him at risk of life-threatening hemorrhage [PC2257]. My examination of Mr. Bucklew on January 8, 2017, as well as my review of the recent MRI and CT imaging report forms the basis for my conclusion that at the present time, Mr. Bucklew is at risk of life-threatening hemorrhage, particularly under the conditions imposed by Missouri's Execution Procedure.

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speak normally and walk without difficulty." In my professional medical opinion, Dr. Antognini's assertion is based upon insufficient medical evidence. The residual effects of a stroke are not limited to speech impairment or decreased ability to walk, and the absence of these residual effects is not definitive proof that an individual has not suffered a stroke. Other symptoms, such as Mr. Bucklew's inability to fully control the muscles of the right side of his face, can be indicative of stroke.

C. December 19, 2016 Imaging and Report

1. The report generated in connection with the MRI imaging conducted on December 19, 2016, confirms my findings that Mr. Bucklew has a large hemangioma impacting his hard and soft palate, lip, nose, uvula, and throat. Specifically, the report describes the relevant portions of the hemangioma as continuing to impact his airway to a significant degree. The hemangioma is reported as smaller by 1/15th of an inch in a region that was not directly within the airway. This difference is without significance and will have no impact in lessening the serious risk to Mr. Bucklew in the setting of his planned execution as outlined above.

2. As already described, Mr. Bucklew's condition is progressive and his airway continues to be compromised. This finding is confirmed both by recent imaging studies and my own personal examination and evaluation of Mr. Bucklew on two separate occasions.

VI. CONCLUSION AND OPINIONS

A. It is my professional opinion that Mr. Bucklew suffers from a severe and life-threatening form of cavernous hemangioma. Given the nature of Mr. Bucklew's condition, it is my medical opinion that the vascular tumors that obstruct Mr. Bucklew's airway will present a permanent threat to his breathing and that life threatening choking episodes will occur on an ongoing basis. When these choking episodes occur, they will be associated with hemorrhaging to a varying degree that will be easily visible by any observer.

B. Mr. Bucklew's particular medical condition places him at almost certain risk for excruciatingly painful choking complications, including visible hemorrhaging, if he is subjected to execution by means of lethal injection.

C. Mr. Bucklew's airway is compromised such that his breathing is labored, and choking and bleeding occur regularly, even under the least stressful circumstances and when Mr. Bucklew is fully alert and capable of taking corrective measures to prevent suffocation.

D. While it is true that Mr. Bucklew is able to go to sleep after taking certain precautionary measures—including positioning himself to maintain a certain head elevation—without asphyxiating, it is not accurate to compare the experience of sleep with the unconsciousness brought on by sedation. When a person begins to choke while sleeping, as often happens to Mr. Bucklew, he is able to wake up and take remedial measures to alleviate the feeling of choking and return to a normal pattern of breathing. When unconsciousness, or reduced consciousness, is brought on by sedation, an individual is incapable of becoming fully alert and ambulatory and is therefore unable to alleviate the feelings of "air hunger" and choking.

E. The Execution Procedure calls for a minimum of three separate injections, to be administered by "non-medical" personnel. As noted above, Mr. Bucklew is

observed to have very poor veins in both of his arms. Mr. Bucklew's veins are so poor that even a qualified and experienced medical professional would have difficulty finding a vein of the proper and necessary quality for large volume intravenous injection as required in the Missouri lethal injection protocol. In these instances, it is frequently necessary to make more than one attempt to place the needle in a viable vein. However, a medical professional will typically start by trying to place the needle in the best available vein. Each subsequent attempt is even less likely to result in the needle being inserted into a suitable vein, because each successive vein will necessarily appear less viable than the one before. The consequences of placing a needle in an inadequate vein can be catastrophic, and in patients with veins as poor as Mr. Bucklew's, it is not uncommon for a vein to "blow" once the fluid begins flowing through the needle.

F. The risk of a vein blowing is even greater where, as here, the chemical being injected is a very strong "base." Certain chemicals can be characterized as either basic or acidic. Strong bases, just like strong acids, are extremely corrosive. The extremely corrosive properties of the Pentobarbital solution called for in the Execution Procedure make it highly likely that Mr. Bucklew's vein would blow during the injection process.

G. The adequacy of Mr. Bucklew's veins is related to the concerns with respect to his airway. Mr. Bucklew is extremely likely to experience an incremental increase in stress with each unsuccessful attempt to find a vein. A blown vein would also greatly increase Mr. Bucklew's stress. As previously explained, the lethal injection procedure itself is naturally a stressful experience. In an individual with Mr. Bucklew's extremely atypical airway, this increase in stress will manifest as increased difficulty breathing because stress typically causes an individual to breathe harder and faster. The increased velocity of air moving through Mr. Bucklew's airway will result in more turbulent airflow, which Mr. Bucklew will experience as an inability to breathe. Therefore, even prior to receiving the lethal injection, Mr. Bucklew is highly likely to experience greatly increased pain and discomfort and a feeling of "air hunger" greater than that which he experiences in the ordinary course of his day. And contrary to his ordinary experience, Mr. Bucklew will not be able to take remedial measures to normalize his breathing.

H. A second factor that is likely to increase the turbulence of Mr. Bucklew's airflow is the fact that the procedure for execution calls for Mr. Bucklew to lie flat during the execution process. However, when forced to lie completely flat, the aperture of Mr. Bucklew's airway is further reduced because of the location of the hemangiomas that necessarily shift so that they further obstruct Mr. Bucklew's airway when he lies flat. Thus, in addition to a greatly increased velocity of flow of air through his airway, the aperture of Mr. Bucklew's airway will significantly decrease. Mr. Bucklew will experience this combination as a painful inability to breathe normally, even as compared to his usual labored breathing.

I. In addition to the above, the Execution Procedure calls for the injection of 5g of pentobarbital, contained in two separate syringes, thereby requiring two separate

injections which will either be inserted into two separate veins, or through a single vein. The pentobarbital is likely to have the effect of impairing Mr. Bucklew's ability to maintain the integrity of his own airway, particularly given the aforementioned factors that will operate to make Mr. Bucklew's breathing extremely labored. Mr. Bucklew will likely not be fully alert or capable of altering his breathing to accommodate his compromised airway as he does while he is fully alert. Unlike when he is asleep naturally, he will not be able to shift position or wake up fully in order to correct his breathing.

J. I strongly disagree with Dr. Antognini's repeated claim that the pentobarbital injection would result in "rapid unconsciousness" and therefore Mr. Bucklew would not experience any suffocating or choking. [Decl. Antognini, ¶ 15]. In my medical opinion, the injection of pentobarbital called for in the Execution Procedure would not result in instantaneous unconsciousness. Rather, Mr. Bucklew would likely experience unconsciousness that sets in progressively as the chemical circulates through his system. It is during this in-between twilight stage that Mr. Bucklew is likely to experience prolonged feelings of suffocation and excruciating pain. This opinion finds support in the Execution Procedure that explicitly allows for the possibility that five minutes after receiving the injection, death may not have occurred and a second series of injections may be necessary. In addition, unconsciousness or semi-consciousness does not necessarily negate the feeling of pain; it only prevents the unconscious or semi-conscious individual from verbally manifesting that pain.

K. Any length of time in which an individual is experiencing choking and suffocation, without the ability to take a breath, is painful. Even if death is achieved after the passage of five minutes, five minutes is an excruciatingly long period of time for the individual to experience feelings of choking or suffocation. The passage of seconds and minutes is medically significant, particularly in Mr. Bucklew's case.

L. When Mr. Bucklew begins to experience the increased velocity of air through his airway coupled with the decreased aperture of his compromised airway, further exacerbated by pentobarbital's progressive effect on his mental and physical state, Mr. Bucklew will naturally struggle to take a breathe. This struggle will likely manifest as convulsive movements regardless of whether Mr. Bucklew is fully conscious. The harder Mr. Bucklew tries to take a breath, the more turbulent the flow of air through his airway will become and Mr. Bucklew will experience this as suffocation.

M. In addition, the increased violence with which Mr. Bucklew attempts to breathe and resultant convulsive movements, combined with the extremely fragile nature of the tissue of his airway, and the increase in blood pressure resulting from increased stress, are highly likely to result in hemorrhaging from the hemangioma in his throat, mouth, and nasal cavity.

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 147 of 200
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 147

N. Mr. Bucklew's airway would be further obstructed by the blood from the hemorrhaging, causing Mr. Bucklew to choke and cough on his own blood during the execution proceeding.

O. In conclusion, it is my professional medical opinion that Mr. Bucklew, as a result of his particular medical condition and the atypical anatomy of his airway, will suffer excruciating pain and prolonged suffocation if he is executed by lethal injection.

"I declare under penalty of perjury that the foregoing is true and correct."

Executed on January 16, 2017

Joel B. Zivot, M.D.

EXHIBIT A

EMORY UNIVERSITY SCHOOL OF MEDICINE
CURRICULUM VITAE

JOEL B. ZIVOT, MD, FRCP(C)

Revised: January, 2017

I. Contact Information

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II. Citizenship: American, Canadian

III. Current Titles and Affiliations:

A. Academic Appointments:

1. Primary Appointments:

a. Associate Professor, Department of Anesthesiology

b. Joint and Secondary Appointments:
Associate Professor, Department of Surgery

2. Other academic appointments:

a. Adjunct Professor, Emory School of Law

B. Other Administrative Appointments:

1. Medical Advisor, Southern Center for Human Rights, Atlanta, Georgia

IV. Previous Academic and Professional Appointments:

A. Fellowship Director, Critical Care Medicine, Department of Anesthesiology, Emory University School of Medicine, Jan 2013-January 2016

B. Medical Director, 4A/5A, EUH (February 2013 –June 2015)

C. Medical Director, IIS, EUHM (June 2010-February 2013)

D. Associate Professor, Department of Anesthesiology, University of Manitoba, Winnipeg, Manitoba, Canada, 2007-2010

E. Member, Academic Promotions Committee, University of Manitoba, Faculty of Medicine, Winnipeg, Manitoba, Canada, 2009

F. Member of selection committee, Physician Assistant Program, The University of Manitoba, Winnipeg, Manitoba, Canada, 2008

G. Member, Accreditation Review Committee-Anesthesiologist Assistants, Commission on Accreditation of Allied Health Education Programs (ARC-AA), 2008

H. Assistant Professor, Department of Anesthesiology and Critical Care Medicine, George Washington University Hospital, District of Columbia, USA, 2005-2007

I. Program Medical Director, Master of Science in Anesthesiology, Case Western Reserve University School of Graduate Studies, Cleveland, Ohio, USA, 2000-2005

J. Assistant Professor of Anesthesia, Surgery, and Intensive Care, University Hospitals of Cleveland, Case Western Reserve University School of Medicine, Cleveland, Ohio, USA, 1998-2005

K. Director Critical Care Medicine Fellowship, Department of Anesthesiology, University of Michigan Medical Center, Ann Arbor, Michigan, USA, 1996-1998

L. Assistant Professor, Department of Anesthesiology and Critical Care Medicine, University of Michigan Medical Center, 1995-1998

V. Previous Administrative and/or Clinical Appointments:

A. Medical Director, Cardio-thoracic ICU, Intensive Care Cardiac Sciences Program, Winnipeg Regional Health Authority, Winnipeg, Manitoba, Canada, 2007-2010

B. Medical Director, CTICU, George Washington University Hospital, Washington, DC, 2005-2007

C. Co-Medical Director, Surgical Intensive Care Unit, University Hospitals of Cleveland, Case Western Reserve University, Cleveland, Ohio, USA, 2002-2005

D. Director, Post Anesthesia Care Unit, Department of Anesthesiology, University of Michigan Medical Center, Ann Arbor, MI, 1995-1998

VI. Licensures / Boards:

A. Licentiate, Medical Council of Canada, 1989-present

B. *License, Controlled Substance, Drug Enforcement Agency, 1995-present*

C. *License, Michigan State Medical Board, 1995-2000*

D. *License, Ohio State Medical Board, 1998-2012*

E. *Fellow, American College of Chest Physicians, 2000-2010*

F. *License, District of Columbia Medical Board, 2005-present*

G. *License, College of Physicians and Surgeons of Manitoba, 2007-2011*

H. *License, Georgia Composite Medical Board, 2010-present*

VII. Specialty Boards:

A. Fellow, Royal College of Physicians of Canada, 1993-present

B. *Diplomat, Anesthesiology, American Board of Anesthesiology, 1995-present*

C. *Diplomat, Critical Care Medicine, American Board of Anesthesiology, 1995-present*

D. *Fellow, American College of Chest Physicians, 2000-2010*

E. *Testamur in basic peri-operative trans-esophageal echocardiography, National Board of Echocardiography, 2010-present*

VIII. Education:

A. University of Manitoba, Winnipeg, Manitoba, Canada, 1980-1983

B. University of Toronto, Toronto, Ontario, Canada, 1984

C. Doctor of Medicine, University of Manitoba, Winnipeg, Manitoba, Canada, 1988

IX. Postgraduate Training:

A. Rotating Internship, Mount Sinai Hospital, University of Toronto, Department of Post Graduate Medical Education, Toronto, Canada, 1988-1989

B. Residency, Anesthesiology, University of Toronto, Department of Anesthesiology, Dr. David McKnight, Toronto, Canada, 1989-1993

C. Residency, Anesthesiology, Cleveland Clinic Foundation, Department of Anesthesiology, Dr. Armin Schubert, Cleveland, Ohio, United States, 1993-1994

D. Fellowship, Critical Care Medicine, Cleveland Clinic Foundation, Department of Anesthesiology, Dr. Marc Popovich, Cleveland, Ohio, United States, 1994-1995

E. Masters of Bioethics, Emory Center for Ethics, Dr. Toby Schonfeld, program director, 2012-present, expected graduation spring 2017

X. Committee Memberships:

A. National and International:

1. American Society of Anesthesiology, Committee on Ethics, 2011-present
2. American Society of Anesthesiology, Care Team Committee, 2007-2009
3. Society of Critical Care Medicine, Committee on Ethics, 2011-present
4. Society of Critical Care Medicine, Patient and Family Satisfaction Committee, 2013-present
5. Society of Cardiovascular Anesthesiology, Committee on Ethics, 2012-2013
6. Society of Critical Care Anesthesiologists, Graduate Education Committee 2013-present

B. Regional and State:

1. President, Cleveland Society of Anesthesiology, 2001-2002
2. President Elect, DC Society of Anesthesiology, 2006-2007

C. Institutional:

1. EUHM Committee on Ethics, 2011-present
2. EUHM Pharmacy and Therapeutics Committee 2011-present
3. EUHM Executive Critical Care Committee 2010-present
4. EUHM CAUTI and CLABSI prevention committee 2010-present
5. EUH Executive Pharmacy Committee 2012-present
6. EUH Antibiotic Utilization Subcommittee 2012-present
7. EUH Resuscitation Committee 2013-present
8. EUH Difficult Airway ad-hoc group 2013-2014

9. EUH Executive Critical Care Committee 2013-present

10. Department of Anesthesiology Residency Review Committee2013-present

11. EUH/EUHM CTS Quality Committee, 2012-present

XI. Peer Review Activities:

A. Manuscripts:

1. Canadian Journal of Anesthesiology, (manuscript reviewer), 2013

2. Critical Care Medicine, (manuscript reviewer), 2014-2015

3. Mayo Clinic Proceedings, (manuscript reviewer), 2015-

B. Grant reviewer

1. Reviewed grant applications for The Emory Georgia Tech Healthcare Innovation Program (HIP), (HIP-ACTSI-GSU) Seed grant

C. Conference Abstracts:

1. National and International:

- *American Society of Anesthesiology, 2012*
- *Abstract Review Committee and poster session moderator*

2. Regional:

- *Midwestern Anesthesia Resident Conference, 2001-2003 Abstract reviewer*

XII. Consultantships:

A. Merck Pharmaceuticals, physician advisory board, 2005-2007

B. Consultant for Wireless EKG Monitor, 2004-2005

C. Masimo Corporation, product design and physician advisory board, 2013-present

D. Doximity, physician advisory committee, 2014-present

XIII. Honors and Awards:

A. Robert B. Sweet Clinical Instructor of the Year, University of Michigan, Department of Anesthesiology, 1997

B. Outstanding Clinical Instructor of the Year, Case Western Reserve University, Master of Science in Anesthesiology Program, 1999

C. Clinical Instructor of the Year. University Hospitals of Cleveland. Department of Anesthesiology, 2000

D. Outstanding Clinical Instructor of the Year, Case Western Reserve University, Master of Science in Anesthesiology Program, 2001

E. *Meritorious Service Award. American Academy of Anesthesiologist Assistants, 2003*

This award was given to me for academic work as the medical director of the Masters in Science of Anesthesiology at Case Western Reserve University and also advocacy for scope of practice, and committee work to improve the relationship between the American Society of Anesthesiology and American Academy of Anesthesiologist Assistants.

F. Quality and Patient Safety Award, University Health Systems Consortium, 2002

This award was given by University Health System Consortium for various quality benchmark projects when I was the co-medical director of the Cardio-thoracic Intensive Care Unit at University Hospitals of Cleveland.

G Distinguished service by a Physician Award, American Academy of Anesthesiologist Assistants, 2005

This award was given to me for work with the American Academy of Anesthesiology Assistants annual meetings where I served as a speaker on multiple locations and also developed and hosted an annual Jeopardy game competition between all of the Masters of Science in Anesthesiology schools around the country.

H. District of Columbia Annual Patient Safety Award, District of Columbia Department of Health, 2006

This award was given by the District of Columbia Department of Health for quality improvement work done when I was the medical director of the cardio-thoracic intensive care unit at George Washington University Hospital I developed several collaborative quality projects between cardio-thoracic surgery and critical care medicine.

I. Presidential Citation, Society of Critical Care Medicine, 2013

This award was given to me for work done within the Society of Critical Care Medicine that included writing a book chapter, service on 2 society committees, and moderating an online debate about the topic of end of life decisions in patients with implanted mechanical cardiac support devices.

XIV. Society Memberships:

A. American Academy of Anesthesiologist Assistant, 2005-present

B. American College of Chest Physicians, 2000-2007

C. American Medical Association, 1995-2000

D. American Medical Association (reactivated), 2010-present

E. Society of Critical Care Anesthesiologists, 1995-present

F. American Society of Anesthesiologists, 1993-present

G. Canadian Anesthesiologist Society, 2007-present

H. District of Columbia Society of Anesthesiologists, 2006-2007

I. International Anesthesia Research Society, 1996-2000

J. International Extra-Corporeal Life Support Organization, 1997-2005

K. Ohio Society of Anesthesiologists, 1993-2005

L. Society of Critical Care Medicine, 1995-present

M. Manitoba Medical Society, 2007-2010

N. Canadian Medical Association, 2008-2012

O. Georgia Society of Anesthesiologists, 2010-present

P. Society of Cardiovascular Anesthesiologists, 2010-present

Q. Society of Academic Anesthesiology Associations, 2013-present

R. Medical Association of Georgia, 2016-

XV. Organization of National or International Conferences:

"On the Ethics of Drug Shortages" June 2012, Jointly with the American Society of Anesthesiology and the Emory Center for Ethics

Administrative Positions: Director, Meeting Planning Committee

Sessions as chair: Overall conference chair

XVI. Research Focus:

Medicine, moral theory, rhetoric, semantics, end of life, physicians and vulnerable populations. Physician participation in lethal injection. Ethogram to study conflict in the operating room. Human factors in critical care decision-making and biological variability. Developed economic model explaining the national generic drug shortages. Studied Propofol wastage in the operating room.

XVII. Grant Support:

A. Active Support:

1. Other: Team Based Science (TBS) grant from the Department of Anesthesiology for Evaluation of conflict in the operating room, $20,000.00

2. The Emory Georgia Tech Healthcare Innovation Program (HIP), (HIP-ACTSI-GSU) Seed grant, $25,000.00, for "Managing Conflict and Error in the Operating Room". Awarded July 2014.

B. Previous Support:

1. $20,000.00 from the American Society of Anesthesiology to plan the meeting "On the Ethics of Drug Shortages". June 2012

XVIII. Clinical Service Contributions

A. Medical director of 11S ICU (EUHM) and 4A/5A ICU (EUH)

I created and chaired a joint protocol development group with Critical Care Medicine, Surgery, Nursing, and Respiratory Therapy with the purpose of improving quality metrics in critical care medicine. This group accomplished several things including a blood conservation strategy for post-operative cardiac surgery patients, intra-aortic balloon pump removal, DVT and GI prophylaxis and the beginning of an atrial fibrillation management protocol. I also wrote and helped implement a rapid extubation protocol for EUH and EUHM cardiac surgery patients.

B. Hospital Committee involvement

I was involved in several Emory committees that addressed a broad range of issues, (see 12 c)

GME involvement, Fellowship Director, Critical Care Medicine, Department of Anesthesiology

I am the fellowship director for critical care medicine. I developed the first joint Anesthesiology-Emergency Medicine critical care medicine fellowship at Emory and I am expanding the number of fellows who will also be trained to assist in providing overnight coverage for airway management at EUH. Overnight airway

coverage has been a project of the EUH emergency airway committee on which I am a member. My ongoing conflict project has been embraced by Emory Healthcare Office of Quality and they are also contributing to the funding and management of the project on an ongoing basis.

XIX. Community Outreach:

A. Community Service

1. International:

St. Petersburg, Russia, 2002, 2004: Home visits to community members who were unable to travel to see a physician

2. Regional:

Hurricane Katrina Medical Response Team, 2005
Emory 500 Atlanta Motor Speedway Health Tent Volunteer, 2010

XX. Media

A. Op-Ed:

1. "Baby's status as human is on trial" Op-Ed, Feb. 19, 2010, Winnipeg Free Press, 2010

2. "Why I am for a moratorium on lethal injections" Op-Ed, Dec 15, 2013, USA Today, 2013

3. "The Slippery Slope from Medicine to Lethal Injection" Op-Ed, May 2, 2014 TIME, 2014

B. Interviews:

1. Anesthesiology News, 2002

-Anesthesiologist Assistants

2. The Medical Post, 2009

-Waiting for Cardiac Surgery

3. The Health Report, CJOB 68 AM, Winnipeg, Canada, 2010

-Cardiac Critical Care
-End of Life in the ICU
-VIP syndrome

4. Inside the Black Box, WREK 91.1 FM, Atlanta, Georgia, 2011

-Biting the Bullet: The Technology of Anesthesia

5 National Public Radio WABE 90.1 FM Atlanta, Georgia, 2011

-Physicians and the death penalty
-Drug shortages

6. Georgia Public Broadcasting, Atlanta GA, 2012

-Drug shortages reaching critical levels

7. Medpage Today, 2013

-No Advantage for Fresh Blood in ICU Transfusions

-Meningitis Outbreak: Suspicion needed for nausea complaints
-Drug Shortages spark use of compounders

8. Medscape Medical News, 2013

-GPOs to Blame for Drug Shortages, Says Physicians Group

9. Medpage Today, 2014

-Cruel and Unusual Punishment
-Lethal Injection: a cruel, painful, terrifying execution

10. Miami Herald, 2014

-Doctor speaks out on use of untested drugs in capital punishment

11. The New York Times, 2014

-Timeline describes frantic scene at Oklahoma execution

12. The Washington Post, 2014

-Florida's Gruesome Execution Theater
-Another execution gone awry. Now what?

13. CNN with Sanjay Gupta, 2014

-Dr. Zivot: Lethal injection not humane

14. Amicus on Slate with Dahlia Lithwick, 2015

-Botched protocols

15. Huffington Post, 2015

-Oklahoma wants to reinstate the gas chamber and experts say it's a bad idea

16. Time, 2015

-The harsh reality of execution by firing squad

XXI. Formal Teaching:

A. Medical Student Teaching:

1. Discovery Project: "Propofol wastage in the ICU" Medical student Mina Tran, 2012-2013, contact hours 4 hrs/week

2. Serve as teacher and mentor for medical students in anesthesiology and critical care medicine. 2010-present, contact hours: 3 hrs/week

3. Instructor for Fundamental Critical Care Support (FCCS) training course for medical students, 2012-present, contact hours: 1 hr/week

4. Forge Medical Student Innovation Group, Mentor, contact hours: 0.5 hrs/week

B. Graduate Programs:

1. Training Programs:

Instructor in the Masters of Science in Anesthesiology program. I developed the first critical care medicine rotation for all of the students and also a series of didactic lectures on the topic of critical care medicine the included "Critical Care Medicine", "Heart Failure", and "Acid-Base Disorders"

2. School of Law:

*Co-chief instructor of **LAW 819-002, "Law, Medicine and Human Rights"**, a 2 credit hour seminar taught in the fall 2016 semester in the Emory School of Law*

3. Residency Programs:

Served as instructor for residents in anesthesiology, emergency medicine, and surgery in the area of critical care medicine. I also sit on the residency review committee for the Department of Anesthesiology. Lecture topics "Septic shock", "Thyroid disease in critical care", "Mechanical heart support", "Pulmonary artery catheters" "Heuristics and biases in clinical reasoning", "delirium and agitation in critical illness". "biological variability"

C. Other Categories

I give regular lectures on a variety of critical care topics for respiratory therapy including "capnography" and "paralytics". I lecture students in the Emory critical care NP/PA program and also regular critical care lectures to the NP/PA practitioners in critical care. I teach those students how to read chest X-rays. I am invited to lecture in the Emory School of Law on the topic "Physician Assisted Suicide".

Emory Tibet Science Initiative:

I taught biology to Buddhist monks at Drepung Loseling Monastery in Southern India in June 2015. This initiative is a result of an invitation from His Holiness, The Dalai Lama, to bring science education to the education of the monks and represents the first time in 700 years that the curriculum has changed. I spent 2 weeks at the monastery teaching for 6 hours per day including microscopy lab teaching. I worked with a series of translators.

XXII. Supervisory Teaching:

A. Residency Program:

Fellowship director, Critical Care Medicine, Department of Anesthesiology 2013-present. I am chiefly responsible for the education and training of the critical care fellows in the Department of Anesthesiology. In addition to a multitude of critical care topics, I assist the fellows in abstract writing for a national critical care meeting, grand rounds for the Department of Anesthesiology and a quality improvement project for Graduate Medical Education Day that occurs annually in June.

B. Other:

I completed a summer internship at the Southern Center for Human Rights and also teach law students on the topic of lethal injection.

XXIII. Lectureships, Seminar Invitations, and Visiting Professorships:

A. "The Case of Samuel Golubchuk: Lessons about end-of-life decision-making?" A debate between Doctors Joel Zivot and Adrian Fine Wednesday, 18 March, 2009, 12h30-13h30. The Centre for Professional and Applied Ethics, The University of Manitoba, Winnipeg, Manitoba

B. "Cardiac output after the Pulmonary Artery Catheter" American Academy of Anesthesiologist Assistants Annual Meeting. Clearwater, Florida, April 2009

C. "End of Life in the ICU", Canadian Hospice Palliative Care Conference Annual Meeting, Winnipeg, Manitoba, Canada. October 2009

D. "Reductions in wait times for cardiac surgery may be harmful", poster presentation, Canadian Cardiovascular Society Annual Meeting, Edmonton, Alberta, Canada, October 2009

E. "Biological Variability" American Society of Anesthesiology, 2009-(I formed a panel to discuss biological variability. My panel consisted of an anesthesiologist, a mathematician, and a physicist.)

F. "End of life in the ICU: When the patient and doctor disagree…" Province wide health care ethics grand rounds, St. Boniface Research Centre, Winnipeg, Manitoba, Canada. January 2010

G. "Mostly dead is slightly alive, the problem with the dying process" Center for Ethics, Emory University, 2011.

H. "Anesthesiology Jeopardy!" American Academy of Anesthesiologist Assistants Annual Meeting, 2006, 2007, 2008, 2009, 2010, 2011

I. "Queuing Theory: Applications for Anesthesiology" American Academy of Anesthesiologist Assistants Annual Meeting, Destin, Florida, 2011

J. "Cardiac Anesthesia: Mostly we have it wrong" American Academy of Anesthesiologist Assistants Annual Meeting, Destin, Florida, 2011

K. "End of life in the ICU: When the patient and doctor disagree" American Academy of Anesthesiologist Assistants Annual Meeting, Destin, Florida, 2011

L. "Sedating the difficult patient" 5th Annual Southeastern Critical Care Summit. Emory University, Atlanta, GA, March 2012

M. "End of Life Care" IMPACT 2012 American Academy of Physician Assistants Annual Meeting, Toronto, Canada, June 2012

N. "Biosimilars, where do we stand?" Georgia Bio and the Georgia Association of Healthcare Executives. September 2012, Atlanta, Georgia

O. "Drug Shortages" Visiting Professor, Rutgers Business School, Newark, New Jersey, November 2012.

P. "Deactivating a permanent cardiac device is not physician assisted death", Pro-con debate Webinar, Society of Critical Care Medicine, November 2012.

Q. "Drug shortages: The invisible hand of the Market" New Horizons in Anesthesiology, Vail, Colorado, February 2013

R. "Hey Anesthesia is a compliment, not an insult: the case for protocols" New Horizons in Anesthesiology, Vail, Colorado, February 2013

S. "Pro/Con: Death Panels in End of Life Care" New Horizons in Anesthesiology, Vail, Colorado, February 2013

T. "Hockey Violence and Killer Apes: Conflict Management in the Operating Room" New Horizons in Anesthesiology, Vail, Colorado, February 2013

U. "Drug Shortages, a failed market" American Society of Anesthesiology Legislative Conference Annual Meeting, April 2013, Washington, DC

V. "Lethal injection in the death penalty", Georgia Law Society and the Southern Center for Human Rights, Atlanta, Georgia, July 2014

W. "Identifying and managing futile care in the ICU", 10th Annual South Easter Critical care Summit, May 2016, Atlanta, Georgia

X. "Capital Punishment and Lethal Injection", Georgia State School of Law, Atlanta, Georgia, September 2016

XXIV. Invitations to National or International Conferences:

A. University of Richmond Law Review, Allen Chair Symposium, 2014, *"The Death Penalty in the United States."*

B. Yale Law School, March 2015, *"Lethal injection."*

C. The Fordham Law Review, Fordham Law School, February 201,6 *"Criminal Behavior and the Brain: When Law and Neuroscience Collide."*

D. American College of Correctional Physicians

Fall Educational Conference
October 2016
Las Vegas, Nevada
"Physician participation in executions: A discussion of the Ethical Challenges and the Pros and Cons, a pro-con debate between Dr. Carlo Muso and Dr. Joel Zivot

E. "Prescribing Price: The Ethics, Science, and Business of Drug Development and Pricing"

Panelist
Emory Conference Center, November 2016
Atlanta, Georgia
Emory Center for Ethics

F. "The First International Emory Tibet Symposium: Bridging Buddhism & Science

Drepung Loseling Monastery
Karnataka State, India"
Panelist: What is life and what are its origins?

XXV. Bibliography:

A. Published and Accepted Research Articles (clinical, basic science, other) in Refereed Journals

1. Perera ER, Vidic DM, **Zivot J**. "Carinal resection with two high frequency jet ventilation delivery systems". Canadian Journal of Anesthesia. Jan 1993: 40(1):59-63. PMID: 8425245

2. **Zivot JB**, Hoffman WD. "Pathological effects of endotoxin". New Horizons. May 1995; 3(2):267-75. PMID:7583168

3. Popovich MJ, Lockrem JD, **Zivot JB**. "Nasal bridle revisited: an improvement in the technique to prevent unintentional removal of small-bore naso-enteric feeding tubes". Critical Care Medicine. March 1996; 24(3):429-31. PMID: 8625630

4. Kumar K, Zarychanski R, Bell DD, Manji R, **Zivot J**, Menkis AH, Arora RC; Cardiovascular Health Research in Manitoba Investigator Group. "Impact of 24-hour in-house intensivist on a dedicated cardiac surgery intensive care unit". *Ann Thorac Surg*. 2009 Oct;88(4):1153-61.doi: 10.1016/j.athoracsur. 2009.04.070

5. ***Zivot JB**. "The Case of Samuel Golubchuk", AJOB Volume 10, Issue 3 March 2010, pages 56 - 57 doi: 10.1080/15265160903681890.*

6. AbdulRazaq A. H. Sokoro, PhD., **Joel B. Zivot**, , MD, FRCPC, Robert E. Ariano, PharmD, FCCM "Neuroleptic malignant syndrome versus Serotonin syndrome: the search for a diagnostic tool?" Ann Pharmacother. 2011 Sep;45(9):e50.doi: 10.1345/aph. 1P787. Epub 2011 Aug 30.

7. When patient and doctor disagree. **Zivot JB**, CMAJ 2012,Jan 10;184(1):76-6. doi: 10.1503/cmaj. 112-2008

8. **Zivot JB**, "Anesthesia does not reduce suffering at the end of life", Crit Care Med. 2012 Jul; 40(7):2268-9. doi: 10.1097/CCM.0b013e31824fc12b.

9. **Zivot JB**, "The absence of cruelty is not the presence of humanness: physicians and the death penalty in the United States". Philos Ethics Humanit Med. 2012 Dec 3;7(1):13. doi: 10.1186/1747-5341-7-13.

10. Mazzeffi, M, **Zivot J**, Buchman T, Halkos M, "In bospital mortality after cardiac surgery: patient characteristics, timing, and association with postoperative length of intensive care unit and hospital stay". Ann Thorac Surg. 2014 Apr;97(4):1220-5. doi: 10.1010/j.athoracsur.2013. 10.040. Epub 2013 Dec 21.

11. **Zivot JB**, "The withdrawal of treatment is still treatment". Can J Anesth 2014; Oct;61(10):895-8

12. **Zivot J**, "Lethal injection: the states medicalize execution" 49 U. Rich. L. Rev. 711 (2015)

13. **Zivot J**, "Elder care in the ICU: Spin bravely?" Crit Care Med 2015 July;43(7):1526-7\

14. Jones LK, Jennings BM, Goetz RM, Haythorn KW, **Zivot JB**, de Waal FB "An Ethogram to Quantify Operating Room Behavior" Ann Behav Med. 2016 Jan 26. [Epub ahead of print]

15. ***Zivot J, Arenson K, "Lessons learned from physician participation in lethal injection: Is Carter v. Canada a death knell for medical self-regulation?" Can J Anaesth 2016 March;63(3):246-251***

16. **Zivot JB**, "Elderly patients in the ICU: Worth it, or not?" Crit Care Med 2016 April;44(4):842-3

17. Moll V, Ward CT, **Zivot JB**, "Antipsychotic-Induced Neuroleptic Malignant Syndrome after Cardiac Surgery" AA Case Rep. 2016 July 1; 7 (1); 5-8

18. **Zivot J**, "Too Sick to be Executed: Shocking Punishment and the Brain" November 2016 Vol 85, pp 697-703, Fordham Law Review

B. Examination Activities:

1. Committee Member, 2005, National Anesthesiologist Assistant Certification

2. Examination Development Committee

3. Question writer, 2005, Critical Care Medicine, National Board of Medical Examiners

4. Question reviewer, 2015, American Board of Anesthesiology-Maintenance of Certification in Anesthesiology (MOCA), Critical Care Medicine

C. Book Chapters:

1. Bojan Paunovic MD, FRCPC[1], Rizwan Manji MD, PhD, FRCSC[2], Rakesh Arora MD, PhD, FRCSC[2], Johan Strumpher MD, FRCPC[3], Rohit Singhal MD, FRCSC[2], **Joel Zivot MD, FRCPC**[4], and Eric Jacobsohn MBChB, MHPE, FRCPC[5] **"Diagnosis and Management of Sepsis and Septic Shock in the Cardiac Surgical Patient". Society of Cardiovascular Anesthesiology Monograph, March 2010**

2. **Zivot, JB**, "What Are Advance Directives?" Critical Care Ethics: A Practice Guide, Third Ed. Copyright 2014 Society of Critical Care Medicine.

D. Other Publications:

1. **Zivot J**, Hoffman W, Lockrem J, Esfandiari S, Bedocs N, Vignali C, Popovich M. **"Changes in gastric intramucosal pH are not predicted by therapeutic changes in conventional hemodynamic variables for septic surgical patients". Critical Care Medicine. 23(1) Supplement A:107, Jan 1995**

2. Webster J, Thomson V, **Zivot J.** "Excessive endotracheal tube cuff pressures are common but are not clinically significant". Anesthesiology 87(3 Suppl) A984, 1997

3 Bloch, MG, **Zivot JB**. "Successful transplantation of liver and kidney allografts from a donor maintained on veno-arterial extracorporeal membrane oxygenation". Anesthesia and Analgesia, 94(25 Supplement) S104, Feb 2002

4. **Zivot J**, Polemenakas A, Aggarwall S, Rowbottom J. "Differential lung capnography after single lung transplant". Critical Care Medicine 30(12) Supplement: A90 December 2002

5 Voltz D, **Zivot J**, "Changes in the Bispectral Index during Deep Hypothermic Circulatory Arrest." Society of Critical Care Medicine Annual Meeting, San Francisco, California, January 2003

6 Ravas R, **Zivot J**, "Blood conservation; Designing a better blood bag", Department of Anesthesiology, University Hospitals of Cleveland, Case Western Reserve University, Cleveland, Ohio, Midwestern Anesthesia Resident Conference (MARC), Chicago, Illinois, March 2003

7. Hacker L, **Zivot J** "Local anesthetic spread for skin infiltration", Department of Anesthesiology, University Hospitals of Cleveland, Case Western Reserve University, Cleveland, Ohio, Midwestern Anesthesia Residents Conference, Chicago, Illinois, March 2003

8. Falk S, **Zivot J**, "Post-operative Sidenafil for pulmonary hypertension following mitral valve repair" 17th Asia Pacific Conference on Diseases of the Chest, Istanbul, Turkey, August 2003

9. Aggarwal S, **Zivot J**, "New onset anterior spinal artery syndrome after lumbar drain removal" Department of Anesthesiology, University Hospitals of Cleveland, Case Western Reserve University, Cleveland, Ohio, Midwestern Anesthesia Residents Conference, Rochester, Minnesota, March 2004

10. Stetz J, **Zivot J**, "Dextromethorphan masquerading as phencyclidine," Department of Anesthesiology, University Hospitals of Cleveland, Case Western Reserve University, Cleveland, Ohio, Midwestern Anesthesia Residents Conference, Rochester, Minnesota, March 2004

11. Petelenz K, **Zivot J**, "Bilateral BIS monitoring in unilateral brain injury", Department of Anesthesiology, University Hospitals of Cleveland, Case Western Reserve University, Cleveland, Ohio, Midwestern Anesthesia Residents Conference, Chicago, Illinois, March 2005

12. Arora RC, Zarychynski R, Bell D, **Zivot J**, Lee J, Kumar K, Zhang L, Menkis A "The Manitoba Model of Post-Operative Cardiac Surgery Intensive Care" The Cardiac Sciences Program, St. Boniface Hospital and the University of Manitoba, Winnipeg, Canada. Toronto Critical Care Meeting, October 2007

13. K Kumar, R Zarychanski, DD Bell, **J Zivot**, J Lee, R Manji, A Menkis, RC Aurora, "The Impact of the Manitoba Model of 24 hour in-house intensivist on a dedicated cardiac surgery ICU" Canadian Cardiovascular Society Annual Meeting, Toronto, Ontario, Canada, October 2008

14. Fergusson DA, Hébert PC, Mazer CD, Fremes S, MacAdams C, Murkin JM, Teoh K, Duke PC, Arellano R, Blajchman MA, Bussières JS, Côté D, Karski J, Martineau R, Robblee JA, Rodger M, Wells G, Clinch J, Pretorius R; BART Investigators. "A comparison of aprotinin and lysine analogues in high-risk cardiac surgery". N Engl J Med. 2008 May 29;358(22):2319-31. Epub 2008 May 14. Erratum in: N Engl J Med. 2010 Sep 23;363(13):1290

15. M Rivet, S Chartrand, G Henry, ICCS Nurses, RC Aurora, DD Bell, A Menkis, **J Zivot**, RA Manji, on the GRACE, GRACE2 Investigators, "Bunk Beds in the ICU - Can Two Cardiac Surgery Patients Occupy One ICU Bed?" Canadian Cardiovascular Society Annual Meeting, Toronto, Ontario, Canada, October 2008

16. RA Manji, E Jacobsohn, D Bell, RK Singal, **J Zivot**, A Menkis " Delirium and bed management in the cardiac surgery ICU" Canadian Cardiovascular Society Annual Meeting, Edmonton, Alberta, Canada, October 2009

17. RA Manji, D Bell, C Shaw, C Moltzan, P Nickerson, AH Menkis, **J Zivot**, E Jacobsohn, Management Suggestions for Cardiac Surgery Patients with a Positive Heparin Induced Thrombocytopenia (HIT) ELISA, Canadian Cardiovascular Society Annual Meeting, Edmonton, Alberta, Canada, October 2009

18. RA Manji, E Jacobsohn, **J Zivot**, H Grocott, Alan Menkis, Prolonged in-hospital wait times does not affect outcomes for urgent coronary artery bypass surgery, Canadian Cardiovascular Society Annual Meeting, Edmonton, Alberta, Canada, October 2009

19. **J Zivot**, RA Manji, E Jacobsohn, H Grocott, A Menkis, Reductions in wait times for cardiac surgery may be harmful, Canadian Cardiovascular Society Annual Meeting, Edmonton, Alberta, Canada, October 2009

20. RA Manji MD PhD FRCSC MBA, E Jacobsohn MBChB FRCPC, H Grocott MD FRCPC, **J Zivot** MD FRCPC, AH Menkis DDS MD FRCSC, Longer in-hospital wait times does not affect outcomes for urgent coronary artery bypass grafting surgery, American Heart Association Annual Meeting, Orlando, Florida, November 2009

21. **Zivot, JB**, "When the patient and the doctor disagree: end of life in the ICU" (poster presentation) American Society of Anesthesiology Annual Meeting, San Diego, California, October 2010

22. Joel Zivot, MD, "A cure in search of a disease, comments on: From an Ethics of Rationing to an Ethics of Waste Avoidance", N Engl J Med. 2012; 366:1949-1951, May 24 2012

23. Mazzeffi, Halkos, **Zivot** "Timing and characterization of post-cardiac surgery in-hospital mortality" Society of Critical Care Annual Meeting Society of Critical Care Annual Meeting, Jan 2013.

24. Neamu, Halkos, **Zivot** "Right Ventricular Laceration During Closed Chest Compression in a Cardiac Surgical Patient" Society of Critical Care Annual Meeting: Jan 2013

Joel B Zivot, MD, FRCP(C)
January 2017

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 167 of 260
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 167

25. Caridi-Scheible, **Zivot**, Paciullo, Connor "Successful treatment of pulmonary-renal syndrome secondary to p-ANCA vasculitis using ECMO with Argatroban", Society of Critical Care Medicine Annual Meeting, San Francisco, CA, Jan 2014

EXHIBIT B

PRIOR EXPERT TESTIMONY

In the past four years, I have testified as an expert by deposition in the following cases: (1) State of Georgia v. Christopher Calmer; (2) State of Georgia v. Catherine Goins; (3) Anthony Boyd v. Commissioner, Alabama Department of Corrections; (4) Ernest Johnson v. Troy Steele; (5) Joshua Bishop v. GDCP Warden; (6) Brian Keith Terrell v. Homer Bryson, Bruce Chatman, and Other Unknown Employees and Agents, Georgia Department of Corrections; (7) Robert L. Henry v. State of Florida; (8) Marcus Wellons v. Commissioner, Georgia Department of Corrections; (9) Tanya Johnson v. Springhill Hospitals; and (10) In re New England Compounding Pharmacy Inc. Products Liability Litigation. This list is true and correct to the best of my knowledge and recollection.

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 169 of 260
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 169

EXHIBIT C

Report of MRI Imaging dated December 23, 2016

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 170 of 268
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 170

510 Kingshighway Boulevard
Saint Louis, Missouri 63110

MIR

MALLINCKRODT
INSTITUTE OF RADIOLOGY
WASHINGTON UNIVERSITY
MEDICAL CENTER

BUCKLEW, RUSSELL
DOB: 06/16/1968
PAT CLASS: Outpatient
MRN: 4280226

This exam was performed at Barnes-Jewish Hospital

Attending Physician: ERNIE-PAUL BARRETTE, M.D.
Requesting Physician: ,
Radiologist(s): FRANZ WIPPOLD, M.D. WEI WANG, M.D.

****FINAL REPORT****

The radiology attending physician has personally reviewed this study, and has reviewed and/or edited this written report and agrees with it.

ACC#	Date	Time	Exam
39993297	Dec 19, 2016	14:39:00	70496 CT Angio Head w/o & w cont
39993329	Dec 19, 2016	14:39:00	70498 CT Angio Neck
39993701	Dec 19, 2016	17:00:00	70543 MRI Orb,Face,Nk, wo&w cont
39993703	Dec 19, 2016	17:00:00	70546 MR Angio Head wo&wi cont
39993730	Dec 19, 2016	17:00:00	70549 MR Angio Neck wo&wi cont

ACC#	Date	Time	Exam
39993297	Dec 19, 2016	14:39:00	70496 CT Angio Head w/o & w cont
39993329	Dec 19, 2016	14:39:00	70498 CT Angio Neck
39993701	Dec 19, 2016	17:00:00	70543 MRI Orb,Face,Nk, wo&w cont
39993703	Dec 19, 2016	17:00:00	70546 MR Angio Head wo&wi cont
39993730	Dec 19, 2016	17:00:00	70549 MR Angio Neck wo&wi cont

EXAMINATION:
1. Computed tomography angiography (CTA) of the neck.

2. Computed tomography angiography (CTA) of the head without and with contrast.

3. Magnetic resonance imaging (MRI) of the face and neck without and with contrast.

4. Magnetic resonance angiography (MRA) of the head without and with contrast.

5. Magnetic resonance angiography (MRA) of the neck without and with contrast.

HISTORY: 48-year-old male with hemangioma in the right tonsillar region.

TECHNIQUE:
1. Computed tomography of the head was performed without contrast according to standard protocol. Computed

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Saint Louis, Missouri 63110

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BUCKLEW, RUSSELL
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PAT CLASS: Outpatient
MRN: 4280226

This exam was performed at Barnes-Jewish Hospital

tomographic angiography was obtained from the level of the aortic arch to the vertex following the uneventful administration of intravenous contrast. 3D images were generated on a dedicated workstation.
Contrast information: 98 mL Optiray-350

2. Multiplanar multi-weighted MRI of the face and neck was performed without and with intravenous contrast using the standard face and neck protocol. Magnetic resonance angiography of the head was performed using separate data set acquisitions including a non-contrast time-of-flight technique and a post-contrast technique to produce axial thin-slice source images. Magnetic resonance angiography of the neck was performed using a separate data set acquisition non-contrast time-of-flight technique and a post-contrast technique to produce thin-slice source images. These images were then used to generate maximum intensity projection (MIP) images.
Contrast information: 18 mL Dotarem

COMPARISON: MRI of neck dated 06/24/2010.

FINDINGS:

An approximately 4.4 cm (transverse) x 3.9 cm (anteroposterior) soft tissue mass arises in right tonsillar region, corresponding to the patients known hemangioma. It has slightly decreased in size, measuring 4.35 cm in lateromedial dimension on this exam, and it measured 4.72 cm in lateromedial dimension on the MRI in 2010.

The mass extends into the right masticator space (involving the right medial pterygoid muscle, and the buccal fat and the pterygopalatine fossa), the right parapharyngeal space, the right posterior floor of mouth, and the right soft palate and uvula. In the oral cavity, the tumor extends along the roof of the oral cavity to involve the hard palate and the soft palate, and it extends anteriorly to the soft tissue of the face, as well as upper lip and nose on the right side of the face. This causes narrowing of the oropharynx and the nasopharynx.

On the CTA, this mass is confirmed, also slightly decreased in size. This decrease in size involves predominantly the right posterior nasal component and masticator space component. Punctate densities likely represent calcifications versus prior interventions. The mass splays the right medial and lateral pterygoid plates and encroaches upon the right portion of the retropharyngeal space. The right internal carotid artery is not involved. A lobulated component of this mass involves the posterior nasal septum and right ethmoid paranasal sinus. An approximately 1 cm component involves the medial right extraconal orbit, as well as the right optic nerve at the orbital apex.

There is a gap and dehiscence of the right cribriform plate with an apparent meningocele descending into the region of the right ethmoid sinus. This is unchanged from the MR of 06/24/2010. This cribriform defect and meningocele may be due to involution of the hemangioma following the presumed intervention of several years ago. The remainder of the brain is unremarkable.

Regard the CTA portion of the examination, the origins of the common carotid arteries and vertebral arteries are normal. The common carotid bifurcations are normal. The courses of the internal carotid arteries are normal. There is a slight enlargement of the right facial artery and the right temporal artery. The circle of Willis is unremarkable. The left vertebral artery is dominant. No aneurysm is seen. No vascular stains supplying the hemangioma.

The nasopharyngeal airway is narrowed and displaced to the left. Also noted is a bullet fragment within the posterior left neck.

No other head and neck blood vessel abnormalities are seen.

IMPRESSION:

510 Boulevard
Saint Louis, Missouri 63110

MIR

MALLINCKRODT
INSTITUTE OF RADIOLOGY
WASHINGTON UNIVERSITY
MEDICAL CENTER

BUCKLEW, RUSSELL
DOB: 05/16/1968
PAT CLASS: Outpatient
MRN: 4280226

This exam was performed at Barnes-Jewish Hospital

1. Extensive deformation of the deep spaces of the midface due to known hemangioma.

2. Slight decrease in size of this hemangioma.

Dictated By: WEI WANG, M.D. on Dec 23 2016 1:25P

This document has been electronically signed by: FRANZ WIPPOLD, M.D. on Dec 23 2016 1:49P

EXHIBIT D

[CDs containing the MRI and CT image files will be sent separatcly via FedEx First Overnight]

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 174 of 200
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 174

STATE OF MISSOURI
DEPARTMENT OF CORRECTIONS
PRE-EXECUTION SUMMARY OF MEDICAL HISTORY

Offender Name: Russell E Bucklew Age: 45 Weight: 168 Height: 5'8

ALLERGIES: Tramadol, Compazine

Most Recent Vital Signs: Temp: 98.0 Pulse: 109 Resp: 20 B/P: 142/84 Pulse Oximetry: 99%

Date: 5/2/14 Date: 5/2/14 Date: 5/2/14 Date: 5/2/14 Date: 5/2/14

Current Medications: Tramadol, clonazepam, hydroxyzine, gabapentin, ranitidine,

Prior Surgeries: Fracture right hand + arm, thoracotomy

Medical Problems: Gunshot wound to head 1996, Cavernous hemangioma- right half of maxilla (upper jaw) and upper lip present for 20 plus years, Hx of

Please complete the following questions based upon a review of the offender's healthcare and confinement records.

		Yes	No	Unknown
1. Has the offender recently had a cold or the flu?	1.		✓	
2. Does the offender experience shortness of breath with activity?	2.		✓	
3. Does the offender have Asthma, bronchitis, or any other breathing problems?	3.		✓	
4. Does the offender wake up at night short of breath?	4.		✓	
5. Has the offender ever had chest pain/heart attack/palpitations?	5.		✓	
6. Does the offender have a heart condition/high blood pressure history or heart failure?	6.		✓	
7. Does the offender have Diabetes or Thyroid disease?	7.		✓	
8. Has the offender ever had Hepatitis, Jaundice, or any Liver disease?	8.		✓	
9. Does the offender have any type of Kidney disease?	9.		✓	
10. Does the offender have a history of Ulcers, Hiatal Hernia, or Gastric Reflux disease?	10.	✓		
11. Does the offender have back or neck pain?	11.	✓		
12. Does the offender have any numbness, weakness, or paralysis in the offender's arms or legs?	12.		✓	
13. Does the offender have a history of stroke?	13.		✓	
14. Does the offender have any muscle or nerve disease (Epilepsy or Parkinson's)?	14.		✓	
15. Has the offender ever had a blood transfusion?	15.			✓
16. Does the offender smoke? Has the offender ever smoked? Packs/day 2 Years smoked 20 yrs	16.	✓		
17. Does the offender have a history of IV drug use?	17.		✓	

Explanation of any YES answers: 11. Complains of pain in jaw area
10. Acid reflux (medical problems)

Completed By: Delaine Webb BSN Date: 5/7/14

MISSOURI DEPARTMENT OF CORRECTIONS
PREPARATION AND ADMINISTRATION OF CHEMICALS
FOR LETHAL INJECTION

A. Execution Team Members

The execution team consists of department employees and contracted medical personnel including a physician, nurse, and pharmacist. The execution team also consists of anyone selected by the department director who provides direct support for the administration of lethal chemicals, including individuals who prescribe, compound, prepare, or otherwise supply the chemicals for use in the lethal injection procedure.

B. Preparation of Chemicals

Medical personnel shall prepare the lethal chemicals. The quantities of these chemicals may not be changed without prior approval of the department director. The chemicals shall be prepared and labeled as follows:

1. Syringes 1 and 2: Five (5) grams of pentobarbital (under whatever name it may be available from a manufacturer, distributor or compounding pharmacy), 100 ml of a 50 mg/mL solution, shall be withdrawn and divided into syringes labeled "1" and "2."

2. Syringe 3: 30 cc of saline solution.

3. Syringes 4 and 5: Five (5) additional grams of pentobarbital (under whatever name it may be available from a manufacturer, distributor or compounding pharmacy), 100 ml of a 50 mg/mL solution, shall be withdrawn into syringes labeled "4" and "5."

4. Syringe 6: 30 cc of saline solution. This syringe is prepared in the event that additional flush is required.

C. Intravenous lines

1. Medical personnel shall determine the most appropriate locations for intravenous (IV) lines. Both a primary IV line and a secondary IV line shall be inserted unless the prisoner's physical condition makes it unduly difficult to insert more than one IV. Medical personnel may insert the primary IV line as a peripheral line or as a central venous line (e.g., femoral, jugular, or subclavian) provided they have appropriate training, education, and experience for that procedure. The secondary IV line is a peripheral line.

2. A sufficient quantity of saline solution shall be injected to confirm that the IV lines have been properly inserted and that the lines are not obstructed.

D. Monitoring of Prisoner

1. The gurney shall be positioned so that medical personnel can observe the prisoner's face directly or with the aid of a mirror.

2. Medical personnel shall monitor the prisoner during the execution.

E. Administration of Chemicals

1. Upon order of the department director, the chemicals shall be injected into the prisoner by the execution team members under the observation of medical personnel. The lights in the execution support room shall be maintained at a sufficient level to permit proper administration of the chemicals.

2. The pentobarbital from syringes 1 and 2 shall be injected.

3. The saline solution from syringe 3 shall be injected.

4. Following a sufficient amount of time for death to occur after the injection of syringe 3, medical personnel shall examine the prisoner to determine if death has occurred. If the prisoner is still breathing, the additional five grams of pentobarbital will injected from syringes 4 and 5 followed by the saline from syringe 6.

5. At the completion of the process and after a sufficient time for death to have occurred, medical personnel shall evaluate the prisoner to confirm death. In the event that the appropriate medical personnel cannot confirm that death has occurred, the curtain shall be reopened until an appropriate amount of time has passed to reevaluate the prisoner.

F. Documentation of Chemicals

1. Medical personnel shall properly dispose of unused chemicals.

2. Before leaving ERDCC, all members of the execution team present at the execution shall complete and sign the "Sequence of Chemicals" form thereby verifying that the chemicals were given in the order specified in this protocol.

3. Before leaving ERDCC, one of the medical personnel present at the execution shall complete and sign the "Chemical Log" indicating the quantities of the chemicals used and the quantities of the chemicals discarded during the execution.

4. Within three days of the execution, the ERDCC warden shall submit the Sequence of Chemicals and the Chemical Log to the director of the Division of Adult Institutions (DAI). The DAI division director and the department director shall review the records. If they do not detect any irregularities, they shall approve the two documents. If any irregularities are noted, the DAI division director shall promptly determine whether there were any deviations from this protocol and shall report his findings to the department director.

Missouri Department of Corrections
Revised October 18, 2013

Photo 6: lower extremities and right inguinal puncture wounds

IN THE UNITED STATES DISTRICT COURT

WESTERN DISTRICT OF MISSOURI

RUSSELL BUCKLEW,	)	
	)	
Plaintiff,	)	
	)	
vs.	)	Case No. 4:14-CV-8000-BP
	)	
GEORGE A. LOMBARDI,	)	
	)	
DAVID A. DORMIRE	)	
	)	
and	)	
	)	
TERRY RUSSELL,	)	
	)	
Defendants.	)	

RULE 26(a)(2) EXPERT REPORT

SUPPLEMENTAL EXPERT REPORT OF JOEL B. ZIVOT, M.D.

I, JOEL B. ZIVOT, being of sound mind and lawful age, hereby state under penalty of perjury as follows:

I. QUALIFICATIONS

A. Education

1. I received my Doctor of Medicine from the University of Manitoba, Canada, in 1988. From 1989–1993, I was a resident in Anesthesiology at the University of Toronto, Department of Post Graduate Medical Education, and from 1993–1995, I completed an additional residency in Anesthesiology and a Fellowship in Critical Care Medicine at the Cleveland Clinic Foundation, Department of Anesthesiology in Cleveland, Ohio.

B. Professional Licenses, Certifications and Memberships

1. I hold an active medical license from the State of Georgia and have held unrestricted medical licenses in Ohio, the District of Columbia, Michigan, and the Canadian provinces of Ontario and Manitoba. I also hold an active license to prescribe narcotics and other controlled substances from the federal Drug Enforcement Administration (DEA).

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 1 of 260
BUCKLEW v. LOMBARDI, et al.
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 137

2. I hold board certification in Anesthesiology from the Royal College of Physicians and Surgeons of Canada and the American Board of Anesthesiology. I am also board certified in Critical Care Medicine from the American Board of Anesthesiology.

C. Professional Experience

1. I have served as the Medical Director of the Cardio-Thoracic Intensive Care Unit and the Fellowship Director for Critical Care Medicine at Emory University Hospital. I am an Associate Professor of Anesthesiology and Surgery at the Emory University School of Medicine and an adjunct Professor of Law at Emory University Law School. A complete list of my qualifications and publications authored in the last ten years is provided in my curriculum vitae attached as Exhibit A to this report.

2. I have practiced anesthesiology and critical care medicine for 22 years, and, in that capacity, I have personally performed or supervised the care of more than 42,000 patients.

3. In the course of my career, I have regularly performed or supervised the anesthesia care of numerous patients whose airways would be termed "difficult" or "very difficult" according to the Mallampati Classification. Airway evaluation includes this prediction score on securing the airway, where Mallampati I is predicted to be straightforward and Mallampati IV is predicted to be very difficult.

4. I am, by reason of my experience, training, and education, an expert in the fields of anesthesiology and critical care medicine. The opinions that follow are within my field of expertise, and are stated to a reasonable degree of medical and scientific certainty unless otherwise noted.

5. A complete list of the cases in which I have given expert testimony is attached as Exhibit B to this report.

D. Compensation

1. My compensation in this matter is as follows: (1) expert fee of $400/hour; (2) 15 hours of record and document review, report writing, and consultation with counsel since October 2016; and (3) approximately 12 hours of travel and examination of Mr. Bucklew with an estimated cost of $3000.00.

II. SUBJECT OF OPINIONS

A. I have been asked by Mr. Bucklew's attorneys in the above-referenced case to render an expert opinion regarding the risks and complications stemming from Mr. Bucklew's deteriorating medical condition—specifically the growing obstruction in Mr. Bucklew's airway—on the execution of Mr. Bucklew by means of lethal injection.

B. As a medical doctor, I am ethically prevented from prescribing or proscribing a method of executing a person. I am bound by these ethics, and am prohibited from assessing whether a different form of execution would be feasible. Therefore, while I can assess Mr. Bucklew's current medical status and render an expert opinion as to the documented and significant risks associated with executing Mr. Bucklew under Missouri's current Execution Procedure, I cannot advise counsel or the Court on how to execute Mr. Bucklew in a way that would satisfy Constitutional requirements.

C. In developing my opinion, and in addition to the materials I reviewed in connection with my declaration dated May 8, 2014, I have considered the following: (1) The report of medical imaging performed at Barnes-Jewish Hospital dated December 23, 2016 [Exhibit C]; (2) Mr. Bucklew's December 19, 2016 MRI and CT imaging from Barnes-Jewish Hospital at Washington University in St. Louis Missouri [Exhibit D]; (3) my own in-person examinations of Mr. Bucklew conducted on May 12, 2014 and on January 8, 2017; (4) Mr. Bucklew's medical records; (5) the Missouri Department of Corrections Procedure for Execution (the "Execution Procedure"); and (6) the Declaration of Joseph F. Antognini dated November 8, 2016.

III. SUMMARY OF OPINIONS

A. Mr. Bucklew suffers from a debilitating, incurable, and progressive condition known as cavernous hemangioma. This condition occurs sporadically and congenitally in the population and not as a consequence of any action on the part of Mr. Bucklew. This condition has caused large diffuse, vascular (blood-filled) tumors to form and grow in Mr. Bucklew's nasal cavity, face, and throat. Cavernous hemangiomas in the nasal cavity, face, and throat are a medically recognized cause of death by suffocation.

B. As a result of the hemangiomas located in Mr. Bucklew's nasal cavity, face and throat, and to a lesser-degree residual scar tissue from a past tracheostomy procedure, Mr. Bucklew's airway is medically termed a "very difficult" airway. Specifically, on the Mallampati four-point scale, Mr. Bucklew's airway is a Mallampati class IV. It is highly likely that Mr. Bucklew, as a result of having a Mallampati class IV airway, would require a surgical airway (i.e., tracheostomy)

in order to safely undergo a surgical procedure requiring a general anesthetic.[1] Mr. Bucklew's airway is so compromised that it is highly unlikely that he could be safely intubated without experiencing a serious hemorrhagic event within his throat.

C. Because of the degree to which Mr. Bucklew's airway is compromised by the hemangiomas, the anatomical mechanics of airflow and breathing, and the particular psychological and physical effects of lethal injection, it is highly likely that Mr. Bucklew would be unable to maintain the integrity of his airway during the time after receiving the lethal injection and before death.

D. Contrary to Dr. Antognini's assertion, the effect of pentobarbital injection as outlined in the Execution Procedure is highly unlikely to be experienced as "rapid unconsciousness followed by death." In my professional medical opinion, the effects of such an injection are highly unlikely to be instantaneous and the period of time between receiving the injection and death could range over a few minutes to many minutes. My view here is supported both by my own professional knowledge of how chemicals of this type are likely to exert their effects in the body as well as by the te[illegible] of Missouri's Execution Procedure, which calls for a waiting period of five minutes after the first two pentobarbital injections, before examining the inmate to determine whether death has occurred. The Execution Procedure expressly acknowledges that the first two Pentobarbital injections may not have caused death within five minutes, in which case a second round of injections is required.

E. As a result of his inability to maintain the integrity of his airway for the period of time beginning with the injection of the Pentobarbital solution and ending with Mr. Bucklew's death several minutes to as long as many minutes later, Mr. Bucklew would be highly likely to experience feelings of "air hunger" and the excruciating pain of prolonged suffocation resulting from the complete obstruction of his airway by the large vascular tumor.

F. As a result of this prolonged experience of suffocation, it is highly likely that Mr. Bucklew will struggle to breathe – a struggle apparent as convulsive movements—and as a result, given the highly friable and fragile state of the tissue of Mr. Bucklew's mouth and airway, he will likely experience hemorrhaging and/or the possible rupture of the tumor. The resultant hemorrhaging will further impede Mr. Bucklew's airway by filling his mouth and airway with blood, causing him to choke and cough on his own blood during the lethal injection process. It is not necessary that Mr. Bucklew be fully conscious in order to experience the excruciating pain and feeling of prolonged suffocation. Also,

[1] Note that while I generally object to Dr. Antognini's comparison between the medical act of general anesthesia and the non-medical act of lethal injection, for the limited purpose of this opinion I refer to the necessity of a tracheotomy in order to undergo general anesthesia only as a frame of reference for the degree to which Mr. Bucklew's airway is compromised. In short, even in a room full of doctors, Mr. Bucklew could not safely lose consciousness by way of sedation without the immediate capability of performing a surgical airway.

regardless of whether Mr. Bucklew is fully conscious, bleeding in his mouth and throat will cause choking and coughing and the coughed blood will be visible to viewers of the execution procedure.

G. In summary, I conclude with a reasonable degree of medical and scientific certainty that it is highly likely that Mr. Bucklew, given his specific congenital medical condition, cannot undergo lethal injection without experiencing the excruciating pain and suffering of prolonged suffocation, convulsions, and visible hemorrhaging.

IV. OBJECTIVE FACTUAL BASES FOR OPINIONS

A. A patient's airflow during breathing will typically be described as either being laminar or turbulent. Laminar flow is a smooth, orderly, linear flow of air with low resistance and is experienced as "easy" breathing by the patient. Turbulent flow, by contrast, is disorganized, has high resistance, and is experienced by the patient as "difficult" breathing. Four factors impact whether airflow is laminar or turbulent: (1) aperture or diameter of the airway, (2) length of the airway, (3) velocity of the flow, and (4) density of the gas. Of these four factors, the most pertinent in this case is the aperture of the airway. The smaller or more obstructed a patient's airway becomes, the more turbulent the flow of air becomes. This aperture narrowing is experienced by the patient as an inability to easily breathe. When a patient feels as though he cannot take a breath, the usual reaction is to breathe harder and faster to take in more air. This triggers the third factor listed above: "velocity of the flow." The faster a patient breathes, the more turbulent the flow becomes, particularly through a narrow or obstructed airway.

B. Diameter of the airway, or aperture, can be further understood with reference to the Mallampati classification used to describe how "difficult" it is to secure an airway in the setting of a medical procedure. An airway can be difficult because of anatomical abnormalities, both congenital and acquired. In this case difficulty in maintaining airway patency is a direct consequence of cavernous hemangiomas in Mr. Bucklew's airway.

C. In clinical cases where a patient has a Mallampati IV airway, an anesthesiologist must proceed with extreme caution and implement specialized precautions, such as creating a surgical airway via tracheotomy, to maintain the integrity of the patient's airway in order to safely prepare a patient for any procedure where the patient is sedated and unable to assist in supporting his or her own ventilation. This is supported by Mr. Bucklew's own medical records, referenced by Dr. Antognini, in which it was noted that Mr. Bucklew underwent a tracheotomy in connection with surgical procedures under general anesthesia [Decl. of Antognini; PC486].

D. Cavernous hemangioma is a condition that results in vascular lesions consisting of abnormally dilated blood vessels. These blood vessels form cavern-like pockets, i.e. vascular tumors or hemangiomas, in which blood pools. The pockets then

leak, or hemorrhage, as a result of defects in the walls of the blood vessels. The lesions can vary in size, and are linked to varying side effects including seizures, stroke symptoms, hemorrhages, and headaches, depending upon the size and location of the particular lesion, and the relative strength of the walls of the affected blood vessels. In addition, symptoms may resolve or reappear over time as the vascular tumor changes in size as it leaks and reabsorbs blood.

E. While the vascular tumors are often benign, in certain cases, such as Mr. Bucklew's, the progressive condition is life-threatening as it eventually leads to obstruction of the patient's airway leading to asphyxiation and death.

V. RECORD EVIDENCE SUPPORTING OPINIONS

A. Historic Medical Records

1. Mr. Bucklew's medical records indicate that, since birth, he has suffered from cavernous hemangioma resulting in vascular tumor formations in his face, brain, and throat. [Bates PC202]. The specific hemangioma at issue affects Mr. Bucklew's nasal cavity, face, right eye, and airway—approaching both the base of Mr. Bucklew's skull and his carotid artery. [PC202]. The location of Mr. Bucklew's hemangioma has resulted in a grossly enlarged uvula and narrowing of his airway resulting in generally turbulent air flow, which Mr. Bucklew experiences as shortness of breath or difficulty breathing.

2. Mr. Bucklew's condition is inoperable due to the severe risk of blood loss during surgery. Furthermore, due to the large size of the hemangioma, Mr. Bucklew's condition has been found to no longer be amenable to sclerotherapy [PC2257].

3. As a result of his condition, Mr. Bucklew has experienced "excruciating" pain and numerous hemorrhagic events, including bleeding from the face and mouth, necessitating emergency trips to the medical unit in which pressure with gauze was applied in order to slow the bleeding. [see e.g. PC2238, PC2227, PC2506].

4. As previously described in my Supplemental Declaration dated December 4, 2015, Mr. Bucklew's tumors are painful, easily bleed, and spontaneously hemorrhage. Mr. Bucklew has described past hemorrhages as sometimes "squirting" blood, while other times presenting as a "slow leak." [PC103].

5. Specifically with respect to Dr. Antognini's discussion of Mr. Bucklew's procedures between 2000 and 2003, Mr. Bucklew's records confirm that he underwent procedures in that time period that required general anesthesia. Records of a procedure that occurred in 2000, however, explicitly state that Mr. Bucklew received a tracheotomy, a procedure undertaken in cases of difficult airways for purposes of maintaining the

integrity of the airway while a patient is under anesthesia. [PC486]. Contrary to Dr. Antognini's apparent conclusion that Mr. Bucklew's airway does not warrant any special considerations, Mr. Bucklew's records show that special procedures were undertaken to account for Mr. Bucklew's difficult airway.

B. Findings of In-Person Examinations

1. The tumors obstructing Mr. Bucklew's airway are so large that Mr. Bucklew is no longer able to lie down flat on his back while sleeping without suffocating. On January 8, 2017, Mr. Bucklew explained that in order to breathe while sleeping, he must sleep on his right side with his head elevated at roughly a 45 degree angle. This position allows Mr. Bucklew to sleep without his airway becoming obstructed by the turn in his airway and his grossly enlarged uvula.

2. Even with the above precautions, Mr. Bucklew explained that his uvula occasionally gets "stuck" in his throat while he sleeps, causing him to wake up feeling as though he is choking and unable to breathe. In addition, the above precautions do not prevent Mr. Bucklew's tumors from leaking or hemorrhaging during the night. When asked to describe his typical morning, Mr. Bucklew explained that the first thing he does each morning is to clean off the blood on his face that leaked from his nose and mouth while he slept.

3. During my examination of Mr. Bucklew on January 8, 2017, I noted several large hemangiomas visible in Mr. Bucklew's hard and soft palate, lip, nose, and uvula. Of particular relevance to the aperture of Mr. Bucklew's airway were the grossly enlarged uvula and the easily visible hemangiomas on his hard and soft palates. Mr. Bucklew also has an easily visible hemangioma growing out of his upper lip and over his mouth. This tumor has enlarged in size since my prior examination of Mr. Bucklew.

4. In addition to the hemangiomas compromising Mr. Bucklew's airway, I also observed that Mr. Bucklew has residual scarring over the front of his throat caused by the past tracheostomy procedure. Mr. Bucklew explained that the scar tissue is tethered to his trachea in a way that makes it difficult to breathe and swallow. This scar tissue contributes to the obstruction of Mr. Bucklew's airway and increases the turbulence of the air flow through Mr. Bucklew's airway.

5. I also observed that Mr. Bucklew had residual loss of feeling in the right side of his face, causing him to be unable to completely close his right eye.[2]

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[2] Dr. Antognini asserts, without having examined Mr. Bucklew, that Mr. Bucklew definitively has not suffered a stroke as a result of his condition. He bases his assertion on the fact that Mr. Bucklew "has recently been observed to

6. I also observed during my examination that Mr. Bucklew has very poor veins in both of his arms. Poor venous visualization suggests that establishing intravenous access in the setting of lethal injection will be potentially difficult, prolonged, and painful to Mr. Bucklew.

7. Also during my January 8, 2017 examination of Mr. Bucklew, I asked him to describe his experience during the MRI Procedure on December 19, 2016. He reported experiencing extreme discomfort during the procedure. In order to maintain the integrity of his airway while lying flat, Mr. Bucklew was forced to consciously alter his breathing pattern, and swallow repeatedly to keep his uvula from settling and completely obstructing his airway, in order to avoid choking.

8. Furthermore, as noted in my October 13, 2015 report, the tissue of Mr. Bucklew's airway has become increasingly fragile over time. In fact, Mr. Bucklew's airway is now so fragile that simply touching it causes the tissue to bleed. As most recently reported by Mr. Bucklew on January 8, 2017, the tissue bleeds so easily that it even bleeds while he is sleeping.

9. My finding that the tissue of Mr. Bucklew's airway is extremely fragile is not inconsistent with my suggestion that Mr. Bucklew undergo a clinical examination that would call for a bronchoscopy or use of a Glidescope. [Decl. Antognini, para. 17]. These procedures are intended to be minimally invasive, and a skillful physician would endeavor to insert the tube with an attached camera carefully into the airway without touching the fragile tissue. However, given Mr. Bucklew's present condition and its progressive nature, as of this date it is my professional medical opinion that Mr. Bucklew's airway is so compromised, and the tissue so fragile, that even the undertaking of a minimally invasive evaluation of his airway would pose very high likelihood of airway bleeding and subsequent loss of the airway that could be fatal.

10. As already described, Mr. Bucklew's condition is progressive. As of April 2012, Mr. Bucklew's medical records indicate that his condition did not appear to place him at risk of life-threatening hemorrhage [PC2257]. My examination of Mr. Bucklew on January 8, 2017, as well as my review of the recent MRI and CT imaging report forms the basis for my conclusion that at the present time, Mr. Bucklew is at risk of life-threatening hemorrhage, particularly under the conditions imposed by Missouri's Execution Procedure.

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speak normally and walk without difficulty." In my professional medical opinion, Dr. Antognini's assertion is based upon insufficient medical evidence. The residual effects of a stroke are not limited to speech impairment or decreased ability to walk, and the absence of these residual effects is not definitive proof that an individual has not suffered a stroke. Other symptoms, such as Mr. Bucklew's inability to fully control the muscles of the right side of his face, can be indicative of stroke.

C. December 19, 2016 Imaging and Report

1. The report generated in connection with the MRI imaging conducted on December 19, 2016, confirms my findings that Mr. Bucklew has a large hemangioma impacting his hard and soft palate, lip, nose, uvula, and throat. Specifically, the report describes the relevant portions of the hemangioma as continuing to impact his airway to a significant degree. The hemangioma is reported as smaller by 1/15th of an inch in a region that was not directly within the airway. This difference is without significance and will have no impact in lessening the serious risk to Mr. Bucklew in the setting of his planned execution as outlined above.

2. As already described, Mr. Bucklew's condition is progressive and his airway continues to be compromised. This finding is confirmed both by recent imaging studies and my own personal examination and evaluation of Mr. Bucklew on two separate occasions.

VI. CONCLUSION AND OPINIONS

A. It is my professional opinion that Mr. Bucklew suffers from a severe and life-threatening form of cavernous hemangioma. Given the nature of Mr. Bucklew's condition, it is my medical opinion that the vascular tumors that obstruct Mr. Bucklew's airway will present a permanent threat to his breathing and that life threatening choking episodes will occur on an ongoing basis. When these choking episodes occur, they will be associated with hemorrhaging to a varying degree that will be easily visible by any observer.

B. Mr. Bucklew's particular medical condition places him at almost certain risk for excruciatingly painful choking complications, including visible hemorrhaging, if he is subjected to execution by means of lethal injection.

C. Mr. Bucklew's airway is compromised such that his breathing is labored, and choking and bleeding occur regularly, even under the least stressful circumstances and when Mr. Bucklew is fully alert and capable of taking corrective measures to prevent suffocation.

D. While it is true that Mr. Bucklew is able to go to sleep after taking certain precautionary measures—including positioning himself to maintain a certain head elevation—without asphyxiating, it is not accurate to compare the experience of sleep with the unconsciousness brought on by sedation. When a person begins to choke while sleeping, as often happens to Mr. Bucklew, he is able to wake up and take remedial measures to alleviate the feeling of choking and return to a normal pattern of breathing. When unconsciousness, or reduced consciousness, is brought on by sedation, an individual is incapable of becoming fully alert and ambulatory and is therefore unable to alleviate the feelings of "air hunger" and choking.

E. The Execution Procedure calls for a minimum of three separate injections, to be administered by "non-medical" personnel. As noted above, Mr. Bucklew is

observed to have very poor veins in both of his arms. Mr. Bucklew's veins are so poor that even a qualified and experienced medical professional would have difficulty finding a vein of the proper and necessary quality for large volume intravenous injection as required in the Missouri lethal injection protocol. In these instances, it is frequently necessary to make more than one attempt to place the needle in a viable vein. However, a medical professional will typically start by trying to place the needle in the best available vein. Each subsequent attempt is even less likely to result in the needle being inserted into a suitable vein, because each successive vein will necessarily appear less viable than the one before. The consequences of placing a needle in an inadequate vein can be catastrophic, and in patients with veins as poor as Mr. Bucklew's, it is not uncommon for a vein to "blow" once the fluid begins flowing through the needle.

F. The risk of a vein blowing is even greater where, as here, the chemical being injected is a very strong "base." Certain chemicals can be characterized as either basic or acidic. Strong bases, just like strong acids, are extremely corrosive. The extremely corrosive properties of the Pentobarbital solution called for in the Execution Procedure make it highly likely that Mr. Bucklew's vein would blow during the injection process.

G. The adequacy of Mr. Bucklew's veins is related to the concerns with respect to his airway. Mr. Bucklew is extremely likely to experience an incremental increase in stress with each unsuccessful attempt to find a vein. A blown vein would also greatly increase Mr. Bucklew's stress. As previously explained, the lethal injection procedure itself is naturally a stressful experience. In an individual with Mr. Bucklew's extremely atypical airway, this increase in stress will manifest as increased difficulty breathing because stress typically causes an individual to breathe harder and faster. The increased velocity of air moving through Mr. Bucklew's airway will result in more turbulent airflow, which Mr. Bucklew will experience as an inability to breathe. Therefore, even prior to receiving the lethal injection, Mr. Bucklew is highly likely to experience greatly increased pain and discomfort and a feeling of "air hunger" greater than that which he experiences in the ordinary course of his day. And contrary to his ordinary experience, Mr. Bucklew will not be able to take remedial measures to normalize his breathing.

H. A second factor that is likely to increase the turbulence of Mr. Bucklew's airflow is the fact that the procedure for execution calls for Mr. Bucklew to lie flat during the execution process. However, when forced to lie completely flat, the aperture of Mr. Bucklew's airway is further reduced because of the location of the hemangiomas that necessarily shift so that they further obstruct Mr. Bucklew's airway when he lies flat. Thus, in addition to a greatly increased velocity of flow of air through his airway, the aperture of Mr. Bucklew's airway will significantly decrease. Mr. Bucklew will experience this combination as a painful inability to breathe normally, even as compared to his usual labored breathing.

I. In addition to the above, the Execution Procedure calls for the injection of 5g of pentobarbital, contained in two separate syringes, thereby requiring two separate

injections which will either be inserted into two separate veins, or through a single vein. The pentobarbital is likely to have the effect of impairing Mr. Bucklew's ability to maintain the integrity of his own airway, particularly given the aforementioned factors that will operate to make Mr. Bucklew's breathing extremely labored. Mr. Bucklew will likely not be fully alert or capable of altering his breathing to accommodate his compromised airway as he does while he is fully alert. Unlike when he is asleep naturally, he will not be able to shift position or wake up fully in order to correct his breathing.

J. I strongly disagree with Dr. Antognini's repeated claim that the pentobarbital injection would result in "rapid unconsciousness" and therefore Mr. Bucklew would not experience any suffocating or choking. [Decl. Antognini, ¶ 15]. In my medical opinion, the injection of pentobarbital called for in the Execution Procedure would not result in instantaneous unconsciousness. Rather, Mr. Bucklew would likely experience unconsciousness that sets in progressively as the chemical circulates through his system. It is during this in-between twilight stage that Mr. Bucklew is likely to experience prolonged feelings of suffocation and excruciating pain. This opinion finds support in the Execution Procedure that explicitly allows for the possibility that five minutes after receiving the injection, death may not have occurred and a second series of injections may be necessary. In addition, unconsciousness or semi-consciousness does not necessarily negate the feeling of pain; it only prevents the unconscious or semi-conscious individual from verbally manifesting that pain.

K. Any length of time in which an individual is experiencing choking and suffocation, without the ability to take a breath, is painful. Even if death is achieved after the passage of five minutes, five minutes is an excruciatingly long period of time for the individual to experience feelings of choking or suffocation. The passage of seconds and minutes is medically significant, particularly in Mr. Bucklew's case.

L. When Mr. Bucklew begins to experience the increased velocity of air through his airway coupled with the decreased aperture of his compromised airway, further exacerbated by pentobarbital's progressive effect on his mental and physical state, Mr. Bucklew will naturally struggle to take a breathe. This struggle will likely manifest as convulsive movements regardless of whether Mr. Bucklew is fully conscious. The harder Mr. Bucklew tries to take a breath, the more turbulent the flow of air through his airway will become and Mr. Bucklew will experience this as suffocation.

M. In addition, the increased violence with which Mr. Bucklew attempts to breathe and resultant convulsive movements, combined with the extremely fragile nature of the tissue of his airway, and the increase in blood pressure resulting from increased stress, are highly likely to result in hemorrhaging from the hemangioma in his throat, mouth, and nasal cavity.

N. Mr. Bucklew's airway would be further obstructed by the blood from the hemorrhaging, causing Mr. Bucklew to choke and cough on his own blood during the execution proceeding.

O. In conclusion, it is my professional medical opinion that Mr. Bucklew, as a result of his particular medical condition and the atypical anatomy of his airway, will suffer excruciating pain and prolonged suffocation if he is executed by lethal injection.

"I declare under penalty of perjury that the foregoing is true and correct."

Executed on January 16, 2017

Joel B. Zivot, M.D.

EXHIBIT A

EMORY UNIVERSITY SCHOOL OF MEDICINE
CURRICULUM VITAE

JOEL B. ZIVOT, MD, FRCP(C)

Revised: January, 2017

I. **Contact Information**

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II. **Citizenship: American, Canadian**

III. **Current Titles and Affiliations:**

A. Academic Appointments:

1. Primary Appointments:

a. Associate Professor, Department of Anesthesiology

b. Joint and Secondary Appointments:
Associate Professor, Department of Surgery

2. Other academic appointments:

a. Adjunct Professor, Emory School of Law

B. Other Administrative Appointments:

1. Medical Advisor, Southern Center for Human Rights, Atlanta, Georgia

IV. **Previous Academic and Professional Appointments:**

A. Fellowship Director, Critical Care Medicine, Department of Anesthesiology, Emory University School of Medicine, Jan 2013-January 2016

B. Medical Director, 4A/5A, BUH (February 2013 –June 2015)

C. Medical Director, 11S, EUHM (June 2010-February 2013)

D. Associate Professor, Department of Anesthesiology, University of Manitoba, Winnipeg, Manitoba, Canada, 2007-2010

E. Member, Academic Promotions Committee, University of Manitoba, Faculty of Medicine, Winnipeg, Manitoba, Canada, 2009

F. Member of selection committee, Physician Assistant Program, The University of Manitoba, Winnipeg, Manitoba, Canada, 2008

G. Member, Accreditation Review Committee-Anesthesiologist Assistants, Commission on Accreditation of Allied Health Education Programs (ARC-AA), 2008

H. Assistant Professor, Department of Anesthesiology and Critical Care Medicine, George Washington University Hospital, District of Columbia, USA, 2005-2007

I. Program Medical Director, Master of Science in Anesthesiology, Case Western Reserve University School of Graduate Studies, Cleveland, Ohio, USA, 2000-2005

J. Assistant Professor of Anesthesia, Surgery, and Intensive Care, University Hospitals of Cleveland, Case Western Reserve University School of Medicine, Cleveland, Ohio, USA, 1998-2005

K. Director Critical Care Medicine Fellowship, Department of Anesthesiology, University of Michigan Medical Center, Ann Arbor, Michigan, USA, 1996-1998

L. Assistant Professor, Department of Anesthesiology and Critical Care Medicine, University of Michigan Medical Center, 1995-1998

V. **Previous Administrative and/or Clinical Appointments:**

A. Medical Director, Cardio-thoracic ICU, Intensive Care Cardiac Sciences Program, Winnipeg Regional Health Authority, Winnipeg, Manitoba, Canada, 2007-2010

B. Medical Director, CTICU, George Washington University Hospital, Washington, DC, 2005-2007

C. Co-Medical Director, Surgical Intensive Care Unit, University Hospitals of Cleveland, Case Western Reserve University, Cleveland, Ohio, USA, 2002-2005

D. Director, Post Anesthesia Care Unit, Department of Anesthesiology, University of Michigan Medical Center, Ann Arbor, MI, 1995-1998

VI. **Licensures / Boards:**

A. Licentiate, Medical Council of Canada, 1989-present

B. *License, Controlled Substance, Drug Enforcement Agency, 1995-present*

C. *License, Michigan State Medical Board, 1995-2000*

D. *License, Ohio State Medical Board, 1998-2012*

E. *Fellow, American College of Chest Physicians, 2000-2010*

F. *License, District of Columbia Medical Board, 2005-present*

G. *License, College of Physicians and Surgeons of Manitoba, 2007-2011*

H. *License, Georgia Composite Medical Board, 2010-present*

VII. Specialty Boards:

A. Fellow, Royal College of Physicians of Canada, 1993-present

B. *Diplomat, Anesthesiology, American Board of Anesthesiology, 1995-present*

C. *Diplomat, Critical Care Medicine, American Board of Anesthesiology, 1995-present*

D. *Fellow, American College of Chest Physicians, 2000-2010*

E. *Testamur in basic peri-operative trans-esophageal echocardiography, National Board of Echocardiography, 2010-present*

VIII. Education:

A. University of Manitoba, Winnipeg, Manitoba, Canada, 1980-1983

B. University of Toronto, Toronto, Ontario, Canada, 1984

C. Doctor of Medicine, University of Manitoba, Winnipeg, Manitoba, Canada, 1988

IX. Postgraduate Training:

A. Rotating Internship, Mount Sinai Hospital, University of Toronto, Department of Post Graduate Medical Education, Toronto, Canada, 1988-1989

B. Residency, Anesthesiology, University of Toronto, Department of Anesthesiology, Dr. David McKnight, Toronto, Canada, 1989-1993

C. Residency, Anesthesiology, Cleveland Clinic Foundation, Department of Anesthesiology, Dr. Armin Schubert, Cleveland, Ohio, United States, 1993-1994

D. Fellowship, Critical Care Medicine, Cleveland Clinic Foundation, Department of Anesthesiology, Dr. Marc Popovich, Cleveland, Ohio, United States, 1994-1995

E. Masters of Bioethics, Emory Center for Ethics, Dr. Toby Schonfeld, program director, 2012-present, expected graduation spring 2017

X. Committee Memberships:

A. National and International:

1. American Society of Anesthesiology, Committee on Ethics, 2011-present
2. American Society of Anesthesiology, Care Team Committee, 2007-2009
3. Society of Critical Care Medicine, Committee on Ethics, 2011-present
4. Society of Critical Care Medicine, Patient and Family Satisfaction Committee, 2013-present
5. Society of Cardiovascular Anesthesiology, Committee on Ethics, 2012-2013
6. Society of Critical Care Anesthesiologists, Graduate Education Committee 2013-present

B. Regional and State:

1. President, Cleveland Society of Anesthesiology, 2001-2002
2. President Elect, DC Society of Anesthesiology, 2006-2007

C. Institutional:

1. EUHM Committee on Ethics, 2011-present
2. EUHM Pharmacy and Therapeutics Committee 2011-present
3. EUHM Executive Critical Care Committee 2010-present
4. EUHM CAUTI and CLABSI prevention committee 2010-present
5. EUH Executive Pharmacy Committee 2012-present
6. EUH Antibiotic Utilization Subcommittee 2012-present
7. EUH Resuscitation Committee 2013-present
8. EUH Difficult Airway ad-hoc group 2013-2014

9. EUH Executive Critical Care Committee 2013-present

10. Department of Anesthesiology Residency Review Committee2013-present

11. EUH/EUHM CTS Quality Committee, 2012-present

XI. Peer Review Activities:

A. Manuscripts:

1. Canadian Journal of Anesthesiology, (manuscript reviewer), 2013

2. Critical Care Medicine, (manuscript reviewer), 2014-2015

3. Mayo Clinic Proceedings, (manuscript reviewer), 2015-

B. Grant reviewer

1. Reviewed grant applications for The Emory Georgia Tech Healthcare Innovation Program (HIP), (HIP-ACTSI-GSU) Seed grant

C. Conference Abstracts:

1. National and International:

- *American Society of Anesthesiology, 2012*
- *Abstract Review Committee and poster session moderator*

2. Regional:

- *Midwestern Anesthesia Resident Conference, 2001-2003*
  Abstract reviewer

XII. Consultantships:

A. Merck Pharmaceuticals, physician advisory board, 2005-2007

B. Consultant for Wireless EKG Monitor, 2004-2005

C. Masimo Corporation, product design and physician advisory board, 2013-present

D. Doximity, physician advisory committee, 2014-present

XIII. Honors and Awards:

A. Robert B. Sweet Clinical Instructor of the Year, University of Michigan, Department of Anesthesiology, 1997

B. Outstanding Clinical Instructor of the Year, Case Western Reserve University, Master of Science in Anesthesiology Program, 1999

C. Clinical Instructor of the Year, University Hospitals of Cleveland, Department of Anesthesiology, 2000

D. Outstanding Clinical Instructor of the Year, Case Western Reserve University, Master of Science in Anesthesiology Program, 2001

E. *Meritorious Service Award, American Academy of Anesthesiologist Assistants, 2003*

This award was given to me for academic work as the medical director of the Masters in Science of Anesthesiology at Case Western Reserve University and also advocacy for scope of practice, and committee work to improve the relationship between the American Society of Anesthesiology and American Academy of Anesthesiologist Assistants.

F. Quality and Patient Safety Award, University Health Systems Consortium, 2002

This award was given by University Health System Consortium for various quality benchmark projects when I was the co-medical director of the Cardio-thoracic Intensive Care Unit at University Hospitals of Cleveland.

G. Distinguished service by a Physician Award, American Academy of Anesthesiologist Assistants, 2005

This award was given to me for work with the American Academy of Anesthesiology Assistants annual meetings where I served as a speaker on multiple locations and also developed and hosted an annual Jeopardy game competition between all of the Masters of Science in Anesthesiology schools around the country.

H. District of Columbia Annual Patient Safety Award, District of Columbia Department of Health, 2006

This award was given by the District of Columbia Department of Health for quality improvement work done when I was the medical director of the cardio-thoracic intensive care unit at George Washington University Hospital. I developed several collaborative quality projects between cardio-thoracic surgery and critical care medicine.

I. Presidential Citation, Society of Critical Care Medicine, 2013

This award was given to me for work done within the Society of Critical Care Medicine that included writing a book chapter, service on 2 society committees, and moderating an online debate about the topic of end of life decisions in patients with implanted mechanical cardiac support devices.

XIV. **Society Memberships:**

A. American Academy of Anesthesiologist Assistant, 2005-present

B. American College of Chest Physicians, 2000-2007

C. American Medical Association, 1995-2000

D. American Medical Association (reactivated), 2010-present

E. Society of Critical Care Anesthesiologists, 1995-present

F. American Society of Anesthesiologists, 1993-present

G. Canadian Anesthesiologist Society, 2007-present

H. District of Columbia Society of Anesthesiologists, 2006-2007

I. International Anesthesia Research Society, 1996-2000

J. International Extra-Corporeal Life Support Organization, 1997-2005

K. Ohio Society of Anesthesiologists, 1993-2005

L. Society of Critical Care Medicine, 1995-present

M. Manitoba Medical Society, 2007-2010

N. Canadian Medical Association, 2008-2012

O. Georgia Society of Anesthesiologists, 2010-present

P. Society of Cardiovascular Anesthesiologists, 2010-present

Q. Society of Academic Anesthesiology Associations, 2013-present

R. Medical Association of Georgia, 2016-

XV. **Organization of National or International Conferences:**

"On the Ethics of Drug Shortages" June 2012, Jointly with the American Society of Anesthesiology and the Emory Center for Ethics

Administrative Positions: Director, Meeting Planning Committee

Sessions as chair: Overall conference chair

XVI. **Research Focus:**

Medicine, moral theory, rhetoric, semantics, end of life, physicians and vulnerable populations. Physician participation in lethal injection. Ethogram to study conflict in the operating room. Human factors in critical care decision-making and biological variability. Developed economic model explaining the national generic drug shortages. Studied Propofol wastage in the operating room.

XVII. Grant Support:

A. Active Support:

1. Other: Team Based Science (TBS) grant from the Department of Anesthesiology for Evaluation of conflict in the operating room, $20,000.00

2. The Emory Georgia Tech Healthcare Innovation Program (HIP), (HIP-ACTSI-GSU) Seed grant, $25,000.00, for "Managing Conflict and Error in the Operating Room". Awarded July 2014.

B. Previous Support:

1. $20,000.00 from the American Society of Anesthesiology to plan the meeting "On the Ethics of Drug Shortages". June 2012

XVIII. Clinical Service Contributions

A. Medical director of 11S ICU (EUHM) and 4A/5A ICU (EUH)

I created and chaired a joint protocol development group with Critical Care Medicine, Surgery, Nursing, and Respiratory Therapy with the purpose of improving quality metrics in critical care medicine. This group accomplished several things including a blood conservation strategy for post-operative cardiac surgery patients, intra-aortic balloon pump removal, DVT and GI prophylaxis and the beginning of an atrial fibrillation management protocol. I also wrote and helped implement a rapid extubation protocol for EUH and EUHM cardiac surgery patients.

B. Hospital Committee involvement

I was involved in several Emory committees that addressed a broad range of issues, (see 12 c)

GME involvement, Fellowship Director, Critical Care Medicine, Department of Anesthesiology

I am the fellowship director for critical care medicine. I developed the first joint Anesthesiology-Emergency Medicine critical care medicine fellowship at Emory and I am expanding the number of fellows who will also be trained to assist in providing overnight coverage for airway management at EUH. Overnight airway

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 156 of 200
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 156

coverage has been a project of the EUH emergency airway committee on which I am a member. My ongoing conflict project has been embraced by Emory Healthcare Office of Quality and they are also contributing to the funding and management of the project on an ongoing basis.

XIX. Community Outreach:

A. Community Service

1. International:

   St. Petersburg, Russia, 2002, 2004: Home visits to community members who were unable to travel to see a physician

2. Regional:

   Hurricane Katrina Medical Response Team, 2005
   Emory 500 Atlanta Motor Speedway Health Tent Volunteer, 2010

XX. Media

A. Op-Ed:

1. "Baby's status as human is on trial" Op-Ed, Feb. 19, 2010, Winnipeg Free Press, 2010
2. "Why I am for a moratorium on lethal injections" Op-Ed, Dec 15, 2013, USA Today, 2013
3. "The Slippery Slope from Medicine to Lethal Injection" Op-Ed, May 2, 2014 TIME, 2014

B. Interviews:

1. Anesthesiology News, 2002

   -Anesthesiologist Assistants

2. The Medical Post, 2009

   -Waiting for Cardiac Surgery

3. The Health Report, CJOB 68 AM, Winnipeg, Canada, 2010

   -Cardiac Critical Care
   -End of Life in the ICU
   -VIP syndrome

4. Inside the Black Box, WREK 91.1 FM, Atlanta, Georgia, 2011

-Biting the Bullet: The Technology of Anesthesia

5. National Public Radio WABE 90.1 FM Atlanta, Georgia, 2011

-Physicians and the death penalty
-Drug shortages

6. Georgia Public Broadcasting, Atlanta GA, 2012

-Drug shortages reaching critical levels

7. Medpage Today, 2013

-No Advantage for Fresh Blood in ICU Transfusions

-Meningitis Outbreak: Suspicion needed for nausea complaints
-Drug Shortages spark use of compounders

8. Medscape Medical News, 2013

-GPOs to Blame for Drug Shortages, Says Physicians Group

9. Medpage Today, 2014

-Cruel and Unusual Punishment
-Lethal Injection: a cruel, painful, terrifying execution

10. Miami Herald, 2014

-Doctor speaks out on use of untested drugs in capital punishment

11. The New York Times, 2014

-Timeline describes frantic scene at Oklahoma execution

12. The Washington Post, 2014

-Florida's Gruesome Execution Theater
-Another execution gone awry. Now what?

13. CNN with Sanjay Gupta, 2014

-Dr. Zivot: Lethal injection not humane

Joel B Zivot, MD, FRCP(C)
January 2017

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 158 of 260
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 158

14. Amicus on Slate with Dahlia Lithwick, 2015

-Botched protocols

15. Huffington Post, 2015

-Oklahoma wants to reinstate the gas chamber and experts say it's a bad idea

16. Time, 2015

-The harsh reality of execution by firing squad

XXI. Formal Teaching:

A. Medical Student Teaching:

1. Discovery Project: "Propofol wastage in the ICU" Medical student Mina Tran, 2012-2013, contact hours 4 hrs/week

2. Serve as teacher and mentor for medical students in anesthesiology and critical care medicine. 2010-present, contact hours: 3 hrs/week

3. Instructor for Fundamental Critical Care Support (FCCS) training course for medical students, 2012-present, contact hours: 1 hr/week

4. Forge Medical Student Innovation Group, Mentor, contact hours: 0.5 hrs/week

B. Graduate Programs:

1. Training Programs:

Instructor in the Masters of Science in Anesthesiology program. I developed the first critical care medicine rotation for all of the students and also a series of didactic lectures on the topic of critical care medicine the included "Critical Care Medicine", "Heart Failure", and "Acid-Base Disorders"

2. School of Law:

Co-chief instructor of LAW 819-002, "Law, Medicine and Human Rights", a 2 credit hour seminar taught in the fall 2016 semester in the Emory School of Law

3. Residency Programs:

Served as instructor for residents in anesthesiology, emergency medicine, and surgery in the area of critical care medicine. I also sit on the residency review committee for the Department of Anesthesiology. Lecture topics "Septic shock", "Thyroid disease in critical care", "Mechanical heart support", "Pulmonary artery catheters" "Heuristics and biases in clinical reasoning", "delirium and agitation in critical illness", "biological variability".

C. Other Categories

I give regular lectures on a variety of critical care topics for respiratory therapy including "capnography" and "paralytics". I lecture students in the Emory critical care NP/PA program and also regular critical care lectures to the NP/PA practitioners in critical care. I teach those students how to read chest X-rays. I am invited to lecture in the Emory School of Law on the topic "Physician Assisted Suicide".

Emory Tibet Science Initiative:

I taught biology to Buddhist monks at Drepung Loseling Monastery in Southern India in June 2015. This initiative is a result of an invitation from His Holiness, The Dalai Lama, to bring science education to the education of the monks and represents the first time in 700 years that the curriculum has changed. I spent 2 weeks at the monastery teaching for 6 hours per day including microscopy lab teaching. I worked with a series of translators.

XXII. Supervisory Teaching:

A. Residency Program:

Fellowship director, Critical Care Medicine, Department of Anesthesiology 2013-present. I am chiefly responsible for the education and training of the critical care fellows in the Department of Anesthesiology. In addition to a multitude of critical care topics, I assist the fellows in abstract writing for a national critical care meeting, grand rounds for the Department of Anesthesiology and a quality improvement project for Graduate Medical Education Day that occurs annually in June.

B. Other:

I completed a summer internship at the Southern Center for Human Rights and also teach law students on the topic of lethal injection.

XXIII. Lectureships, Seminar Invitations, and Visiting Professorships:

A. "The Case of Samuel Golubchuk: Lessons about end-of-life decision-making?" A debate between Doctors Joel Zivot and Adrian Fine Wednesday, 18 March, 2009, 12h30-13h30. The Centre for Professional and Applied Ethics, The University of Manitoba, Winnipeg, Manitoba

B. "Cardiac output after the Pulmonary Artery Catheter" American Academy of Anesthesiologist Assistants Annual Meeting. Clearwater, Florida, April 2009

C. "End of Life in the ICU", Canadian Hospice Palliative Care Conference Annual Meeting, Winnipeg, Manitoba, Canada. October 2009

D. "Reductions in wait times for cardiac surgery may be harmful", poster presentation, Canadian Cardiovascular Society Annual Meeting, Edmonton, Alberta, Canada, October 2009

E. "Biological Variability" American Society of Anesthesiology, 2009-(I formed a panel to discuss biological variability. My panel consisted of an anesthesiologist, a mathematician, and a physicist.)

F. "End of life in the ICU: When the patient and doctor disagree…" Province wide health care ethics grand rounds, St. Boniface Research Centre, Winnipeg, Manitoba, Canada. January 2010

G. "Mostly dead is slightly alive, the problem with the dying process" Center for Ethics, Emory University, 2011.

H. "Anesthesiology Jeopardy!" American Academy of Anesthesiologist Assistants Annual Meeting, 2006, 2007, 2008, 2009, 2010, 2011

I. "Queuing Theory: Applications for Anesthesiology" American Academy of Anesthesiologist Assistants Annual Meeting, Destin, Florida, 2011

J. "Cardiac Anesthesia: Mostly we have it wrong" American Academy of Anesthesiologist Assistants Annual Meeting, Destin, Florida, 2011

K. "End of life in the ICU: When the patient and doctor disagree" American Academy of Anesthesiologist Assistants Annual Meeting, Destin, Florida, 2011

L. "Sedating the difficult patient" 5th Annual Southeastern Critical Care Summit. Emory University, Atlanta, GA, March 2012

M. "End of Life Care" IMPACT 2012 American Academy of Physician Assistants Annual Meeting, Toronto, Canada, June 2012

N. "Biosimilars, where do we stand?" Georgia Bio and the Georgia Association of Healthcare Executives. September 2012, Atlanta, Georgia

Joel B Zivot, MD, FRCP(C)
January 2017

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 161 of 260
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 161

O. "Drug Shortages" Visiting Professor, Rutgers Business School, Newark, New Jersey, November 2012.

P. "Deactivating a permanent cardiac device is not physician assisted death", Pro-con debate Webinar, Society of Critical Care Medicine, November 2012.

Q. "Drug shortages: The invisible hand of the Market" New Horizons in Anesthesiology, Vail, Colorado, February 2013

R. "Hey Anesthesia is a compliment, not an insult: the case for protocols" New Horizons in Anesthesiology, Vail, Colorado, February 2013

S. "Pro/Con: Death Panels in End of Life Care" New Horizons in Anesthesiology, Vail, Colorado, February 2013

T. "Hockey Violence and Killer Apes: Conflict Management in the Operating Room" New Horizons in Anesthesiology, Vail, Colorado, February 2013

U. "Drug Shortages, a failed market" American Society of Anesthesiology Legislative Conference Annual Meeting, April 2013, Washington, DC

V. "Lethal injection in the death penalty", Georgia Law Society and the Southern Center for Human Rights, Atlanta, Georgia, July 2014

W. "Identifying and managing futile care in the ICU", 10th Annual South Easter Critical care Summit, May 2016, Atlanta, Georgia

X. "Capital Punishment and Lethal Injection", Georgia State School of Law, Atlanta, Georgia, September 2016

XXIV. Invitations to National or International Conferences:

A. University of Richmond Law Review, Allen Chair Symposium, 2014, *"The Death Penalty in the United States."*

B. Yale Law School, March 2015, *"Lethal injection."*

C. The Fordham Law Review, Fordham Law School, February 201,6 *"Criminal Behavior and the Brain: When Law and Neuroscience Collide."*

D. American College of Correctional Physicians

Fall Educational Conference
October 2016
Las Vegas, Nevada
"Physician participation in executions: A discussion of the Ethical Challenges and the Pros and Cons, a pro-con debate between Dr. Carlo Musso and Dr. Joel Zivot

E. "Prescribing Price: The Ethics, Science, and Business of Drug Development and Pricing"

Panelist
Emory Conference Center, November 2016
Atlanta, Georgia
Emory Center for Ethics

F. "The First International Emory Tibet Symposium: Bridging Buddhism & Science

Drepung Loseling Monastery
Karnataka State, India"
Panelist: What is life and what are its origins?

XXV. Bibliography:

A. Published and Accepted Research Articles (clinical, basic science, other) in Refereed Journals

1. Perera ER, Vidic DM, **Zivot J.** "Carinal resection with two high frequency jet ventilation delivery systems". Canadian Journal of Anesthesia. Jan 1993; 40(1):59-63. PMID: 8425245

2. **Zivot JB**, Hoffman WD. "Pathological effects of endotoxin". New Horizons. May 1995; 3(2):267-75. PMID:7583168

3. Popovich MJ, Lockrem JD, **Zivot JB.** "Nasal bridle revisited: an improvement in the technique to prevent unintentional removal of small-bore naso-enteric feeding tubes". Critical Care Medicine. March 1996; 24(3):429-31. PMID: 8625630

4. Kumar K, Zarychanski R, Bell DD, Manji R, **Zivot J**, Menkis AH, Arora RC; Cardiovascular Health Research in Manitoba Investigator Group. "Impact of 24-hour in-house intensivist on a dedicated cardiac surgery intensive care unit". *Ann Thorac Surg*. 2009 Oct;88(4):1153-61.doi: 10.1016/j.athoracsur. 2009.04.070

5. *Zivot JB. "The Case of Samuel Golubchuk", AJOB Volume 10, Issue 3 March 2010, pages 56 – 57 doi: 10.1080/15265160903681890.*

6. AbdulRazaq A. H. Sokoro, PhD., **Joel B. Zivot**, , MD, FRCPC, Robert E. Ariano, PharmD, FCCM "Neuroleptic malignant syndrome versus Serotonin syndrome: the search for a diagnostic tool?" Ann Pharmacother. 2011 Sep;45(9):e50.doi: 10.1345/aph. 1P787. Epub 2011 Aug 30.

7. When patient and doctor disagree. **Zivot JB**, CMAJ 2012,Jan 10;184(1):76-6. doi: 10.1503/cmaj. 112-2008

8. **Zivot JB**, "Anesthesia does not reduce suffering at the end of life", Crit Care Med. 2012 Jul; 40(7):2268-9. doi: 10.1097/CCM.0b013e31824fc12b.

9. **Zivot JB**, "The absence of cruelty is not the presence of humanness: physicians and the death penalty in the United States". Philos Ethics Humanit Med. 2012 Dec 3;7(1):13. doi: 10.1186/1747-5341-7-13.

10. Mazzeffi, M, **Zivot J**, Buchman T, Halkos M, "In hospital mortality after cardiac surgery: patient characteristics, timing, and association with postoperative length of intensive care unit and hospital stay". Ann Thorac Surg. 2014 Apr;97(4):1220-5. doi: 10.1010/j.athoracsur.2013. 10.040. Epub 2013 Dec 21.

11. **Zivot JB**, "The withdrawal of treatment is still treatment". Can J Anesth 2014; Oct;61(10):895-8

12. **Zivot J**, "Lethal injection: the states medicalize execution" 49 U. Rich. L. Rev. 711 (2015)

13. **Zivot J**, "Elder care in the ICU: Spin bravely?" Crit Care Med 2015 July;43(7):1526-7\

14. Jones LK, Jennings BM, Goetz RM, Haythorn KW, **Zivot JB**, de Waal FB "An Ethogram to Quantify Operating Room Behavior" Ann Behav Med. 2016 Jan 26. [Epub ahead of print]

15. ***Zivot J, Arenson K, "Lessons learned from physician participation in lethal injection: Is Carter v. Canada a death knell for medical self-regulation?" Can J Anaesth 2016 March;63(3):246-251***

16. **Zivot JB**, "Elderly patients in the ICU: Worth it, or not?" Crit Care Med 2016 April;44(4):842-3

17. Moll V, Ward CT, **Zivot JB**, "Antipsychotic-Induced Neuroleptic Malignant Syndrome after Cardiac Surgery" AA Case Rep. 2016 July 1; 7 (1); 5-8

18. **Zivot J**, "Too Sick to be Executed: Shocking Punishment and the Brain" November 2016 Vol 85, pp 697-703, Fordham Law Review

B. Examination Activities:

1. Committee Member, 2005, National Anesthesiologist Assistant Certification

2. Examination Development Committee

3. Question writer, 2005, Critical Care Medicine, National Board of Medical Examiners

4. Question reviewer, 2015, American Board of Anesthesiology- Maintenance of Certification in Anesthesiology (MOCA), Critical Care Medicine

C. Book Chapters:

1. Bojan Paunovic MD, FRCPC[1], Rizwan Manji MD, PhD, FRCSC[2], Rakesh Arora MD, PhD, FRCSC[2], Johan Stumpfle MD, FRCPC[3], Rohit Singhal MD, FRCSC[2], Joel Zivot MD, FRCPC[4], and Eric Jacobsohn MBChB, MHPE, FRCPC[3] "Diagnosis and Management of Sepsis and Septic Shock in the Cardiac Surgical Patient". Society of Cardiovascular Anesthesiology Monograph, March 2010

2. **Zivot, JB**, "What Are Advance Directives?" Critical Care Ethics: A Practice Guide, Third Ed. Copyright 2014 Society of Critical Care Medicine.

D. Other Publications:

1. **Zivot J**, Hoffman W, Lockrem J, Esfandiari S, Bedocs N, Vignali C, Popovich M. "Changes in gastric intramucosal pH are not predicted by therapeutic changes in conventional hemodynamic variables for septic surgical patients". Critical Care Medicine. 23(1) Supplement A:107, Jan 1995

2. Webster J, Thomson V, **Zivot J.** "Excessive endotracheal tube cuff pressures are common but are not clinically significant". Anesthesiology 87(3 Suppl) A984, 1997

3. Bloch, MG, **Zivot JB**. "Successful transplantation of liver and kidney allografts from a donor maintained on veno-arterial extracorporeal membrane oxygenation". Anesthesia and Analgesia, 94(25 Supplement) S104, Feb 2002

4. **Zivot J**, Polemenakas A, Aggarwall S, Rowbottom J. "Differential lung capnography after single lung transplant". Critical Care Medicine 30(12) Supplement: A90 December 2002

5. Voltz D, **Zivot J**, "Changes in the Bispectral Index during Deep Hypothermic Circulatory Arrest." Society of Critical Care Medicine Annual Meeting, San Francisco, California, January 2003

6. Ravas R, Zivot J, "Blood conservation; Designing a better blood bag", Department of Anesthesiology, University Hospitals of Cleveland, Case Western Reserve University, Cleveland, Ohio, Midwestern Anesthesia Resident Conference (MARC), Chicago, Illinois, March 2003

7. Hacker L, Zivot J "Local anesthetic spread for skin infiltration", Department of Anesthesiology, University Hospitals of Cleveland, Case Western Reserve University, Cleveland, Ohio, Midwestern Anesthesia Residents Conference, Chicago, Illinois, March 2003

8. Falk S, Zivot J, "Post-operative Sildenafil for pulmonary hypertension following mitral valve repair" 17th Asia Pacific Conference on Diseases of the Chest, Istanbul, Turkey, August 2003

9. Aggarwal S, Zivot J, "New onset anterior spinal artery syndrome after lumbar drain removal" Department of Anesthesiology, University Hospitals of Cleveland, Case Western Reserve University, Cleveland, Ohio, Midwestern Anesthesia Residents Conference, Rochester, Minnesota, March 2004

10. Stetz J, Zivot J, "Dextromethorphan masquerading as phencyclidine," Department of Anesthesiology, University Hospitals of Cleveland, Case Western Reserve University, Cleveland, Ohio, Midwestern Anesthesia Residents Conference, Rochester, Minnesota, March 2004

11. Petelenz K, Zivot J, "Bilateral BIS monitoring in unilateral brain injury", Department of Anesthesiology, University Hospitals of Cleveland, Case Western Reserve University, Cleveland, Ohio, Midwestern Anesthesia Residents Conference, Chicago, Illinois, March 2005

12. Arora RC, Zarychynski R, Bell D, Zivot J, Lee J, Kumar K, Zhang L, Menkis A "The Manitoba Model of Post-Operative Cardiac Surgery Intensive Care" The Cardiac Sciences Program, St. Boniface Hospital and the University of Manitoba, Winnipeg, Canada. Toronto Critical Care Meeting, October 2007

13. K Kumar, R Zarychanski, DD Bell, J Zivot, J Lee, R Manji, A Menkis, RC Aurora, "The Impact of the Manitoba Model of 24 hour in-house intensivist on a dedicated cardiac surgery ICU" Canadian Cardiovascular Society Annual Meeting, Toronto, Ontario, Canada, October 2008

14. Ferguson DA, Hébert PC, Mazer CD, Fremes S, MacAdams C, Murkin JM, Teoh K, Duke PC, Arellano R, Blajchman MA, Bussières JS, Côté D, Karski J, Martineau R, Robblee JA, Rodger M, Wells G, Clinch J, Pretorius R; BART Investigators. "A comparison of aprotinin and lysine analogues in high-risk cardiac surgery". N Engl J Med. 2008 May 29;358(22):2319-31. Epub 2008 May 14. Erratum in: N Engl J Med. 2010 Sep 23;363(13):1290

Joel B Zivot, MD, FRCP(C)
January 2017

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 166 of 200
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 166

15. M Rivet, S Chartrand, G Henry, ICCS Nurses, RC Aurora, DD Bell, A Menkis, **J Zivot**, RA Manji, on the GRACE, GRACE2 Investigators, "Bunk Beds in the ICU - Can Two Cardiac Surgery Patients Occupy One ICU Bed?" Canadian Cardiovascular Society Annual Meeting, Toronto, Ontario, Canada, October 2008

16. RA Manji, E Jacobsohn, D Bell, RK Singal, **J Zivot**, A Menkis " Delirium and bed management in the cardiac surgery ICU" Canadian Cardiovascular Society Annual Meeting, Edmonton, Alberta, Canada, October 2009

17. RA Manji, D Bell, C Shaw, C Moltzan, P Nickerson, AH Menkis, **J Zivot**, E Jacobsohn, Management Suggestions for Cardiac Surgery Patients with a Positive Heparin Induced Thrombocytopenia (HIT) ELISA, Canadian Cardiovascular Society Annual Meeting, Edmonton, Alberta, Canada, October 2009

18. RA Manji, E Jacobsohn, **J Zivot**, H Grocott, Alan Menkis, Prolonged in-hospital wait times does not affect outcomes for urgent coronary artery bypass surgery, Canadian Cardiovascular Society Annual Meeting, Edmonton, Alberta, Canada, October 2009

19. **J Zivot**, RA Manji, E Jacobsohn, H Grocott, A Menkis, Reductions in wait times for cardiac surgery may be harmful, Canadian Cardiovascular Society Annual Meeting, Edmonton, Alberta, Canada, October 2009

20. RA Manji MD PhD FRCSC MBA, E Jacobsohn MBChB FRCPC, H Grocott MD FRCPC, **J Zivot** MD FRCPC, AH Menkis DDS MD FRCSC, Longer in-hospital wait times does not affect outcomes for urgent coronary artery bypass grafting surgery, American Heart Association Annual Meeting, Orlando, Florida, November 2009

21. **Zivot, JB**, "When the patient and the doctor disagree: end of life in the ICU" (poster presentation) American Society of Anesthesiology Annual Meeting, San Diego, California, October 2010

22. Joel Zivot, MD, "A cure in search of a disease, comments on: From an Ethics of Rationing to an Ethics of Waste Avoidance", N Engl J Med. 2012; 366:1949-1951, May 24 2012

23. Mazzeffi, Halkos, **Zivot** "Timing and characterization of post-cardiac surgery in-hospital mortality" Society of Critical Care Annual Meeting Society of Critical Care Annual Meeting, Jan 2013.

24. Neamu, Halkos, **Zivot** "Right Ventricular Laceration During Closed Chest Compression in a Cardiac Surgical Patient" Society of Critical Care Annual Meeting: Jan 2013

Joel B Zivot, MD, FRCP(C)
January 2017

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 167 of 200
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 167

25. Caridi-Scheible, Zivot, Paciullo, Connor "Successful treatment of pulmonary-renal syndrome secondary to p-ANCA vasculitis using ECMO with Argatroban", Society of Critical Care Medicine Annual Meeting, San Francisco, CA, Jan 2014

EXHIBIT B

PRIOR EXPERT TESTIMONY

In the past four years, I have testified as an expert by deposition in the following cases: (1) State of Georgia v. Christopher Calmer; (2) State of Georgia v. Catherine Goins; (3) Anthony Boyd v. Commissioner, Alabama Department of Corrections; (4) Ernest Johnson v. Troy Steele; (5) Joshua Bishop v. GDCP Warden; (6) Brian Keith Terrell v. Homer Bryson, Bruce Chatman, and Other Unknown Employees and Agents, Georgia Department of Corrections; (7) Robert L. Henry v. State of Florida; (8) Marcus Wellons v. Commissioner, Georgia Department of Corrections; (9) Tanya Johnson v. Springhill Hospitals; and (10) In re New England Compounding Pharmacy Inc. Products Liability Litigation. This list is true and correct to the best of my knowledge and recollection.

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 169 of 260
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 169

EXHIBIT C

Report of MRI Imaging dated December 23, 2016

510 Saint Louis, Missouri 63110

MIR

MALLINCKRODT
INSTITUTE OF RADIOLOGY
WASHINGTON UNIVERSITY
MEDICAL CENTER

BUCKLEW, RUSSELL
DOB: 06/16/1968
PAT CLASS: Outpatient
MRN: 4280226

This exam was performed at Barnes-Jewish Hospital

Attending Physician: ERNIE-PAUL BARRETTE, M.D.
Requesting Physician:
Radiologist(s): FRANZ WIPPOLD, M.D. WEI WANG, M.D.

FINAL REPORT

The radiology attending physician has personally reviewed this study, and has reviewed and/or edited this written report and agrees with it.

ACC#	Date	Time	Exam
30993297	Dec 19, 2016	14:39:00	70496 CT Angio Head w/o & w cont
30993329	Dec 19, 2016	14:39:00	70498 CT Angio Neck
30993701	Dec 19, 2016	17:00:00	70543 MRI Orb,Face,Nk, w&w cont
30993703	Dec 19, 2016	17:00:00	70546 MR Angio Head w&wo cont
30993730	Dec 19, 2016	17:00:00	70549 MR Angio Neck w&wo cont

ACC#	Date	Time	Exam
30993297	Dec 19, 2016	14:39:00	70496 CT Angio Head w/o & w cont
30993329	Dec 19, 2016	14:39:00	70498 CT Angio Neck
30993701	Dec 19, 2016	17:00:00	70543 MRI Orb,Face,Nk, w&w cont
30993703	Dec 19, 2016	17:00:00	70546 MR Angio Head w&wo cont
30993730	Dec 19, 2016	17:00:00	70549 MR Angio Neck w&wo cont

EXAMINATION:
1. Computed tomography angiography (CTA) of the neck.

2. Computed tomography angiography (CTA) of the head without and with contrast.

3. Magnetic resonance imaging (MRI) of the face and neck without and with contrast.

4. Magnetic resonance angiography (MRA) of the head without and with contrast.

5. Magnetic resonance angiography (MRA) of the neck without and with contrast.

HISTORY: 48-year-old male with hemangioma in the right tonsillar region.

TECHNIQUE:
1. Computed tomography of the head was performed without contrast according to standard protocol. Computed

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 171 of 200
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 171

Saint Louis, Missouri 63110

MIR

MALLINCKRODT
INSTITUTE OF RADIOLOGY
WASHINGTON UNIVERSITY
MEDICAL CENTER

BUCKLEW, RUSSELL
DOB: 05/18/1968
PAT CLASS: Outpatient
MRN: 4280228

This exam was performed at Barnes-Jewish Hospital

tomographic angiography was obtained from the level of the aortic arch to the vertex following the uneventful administration of intravenous contrast. 3D images were generated on a dedicated workstation.
Contrast information: 85 mL Optiray-350

2. Multiplanar multi-weighted MRI of the face and neck was performed without and with intravenous contrast using the standard face and neck protocol. Magnetic resonance angiography of the head was performed using separate data set acquisitions including a non-contrast time-of-flight technique and a post-contrast technique to produce axial thin-slice source images. Magnetic resonance angiography of the neck was performed using a separate data set acquisition non-contrast time-of-flight technique and a post-contrast technique to produce thin-slice source images. These images were then used to generate maximum intensity projection (MIP) images.
Contrast information: 18 ml. Dotarem

COMPARISON: MRI of neck dated 09/24/2010.

FINDINGS:

An approximately 4.4 cm (transverse) x 3.9 cm (anteroposterior) soft tissue mass arises in right tonsillar region, corresponding to the patients known hemangioma. It has slightly decreased in size, measuring 4.35 cm in lateromedial dimension on this exam, and it measured 4.72 cm in lateromedial dimension on the MRI in 2010.

The mass extends into the right masticator space (involving the right medial pterygoid muscle, and the buccal fat and the pterygopalatine fossa), the right parapharyngeal space, the right posterior floor of mouth, and the right soft palate and uvula. In the oral cavity, the tumor extends along the roof of the oral cavity to involve the hard palate and the soft palate, and it extends anteriorly to the soft tissue of the face, as well as upper lip and nose on the right side of the face. This causes narrowing of the oropharynx and the nasopharynx.

On the CTA, this mass is confirmed, also slightly decreased in size. This decrease in size involves predominantly the right posterior nasal component and masticator space component. Punctate densities likely represent calcifications versus prior interventions. The mass splays the right medial and lateral pterygoid plates and encroaches upon the right portion of the nasopharyngeal space. The right internal carotid artery is not involved. A lobulated component of this mass involves the posterior nasal septum and right ethmoid paranasal sinus. An approximately 1 cm component involves the medial right extraconal orbit, as well as the right optic nerve at the orbital apex.

There is a gap and dehiscence of the right cribriform plate with an apparent meningocele descending into the region of the right ethmoid sinus. This is unchanged from the MR of 09/24/2010. This cribriform defect and meningocele may be due to involution of the hemangioma following the presumed intervention of several years ago. The remainder of the brain is unremarkable.

[redacted]

Beyond the CTA portion of the examination, the origins of the common carotid arteries are normal. The cervical carotid bifurcations are normal. The courses of the internal carotid arteries are normal. There is a slight enlargement of the right facial artery and the right temporal artery. The circle of Willis is unremarkable. The left vertebral artery is dominant. No aneurysm is seen. No vascular shunts supplying the hemangioma.

The nasopharyngeal airway is narrowed and displaced to the left. Also noted is a bullet fragment within the posterior left neck.

No other head and neck blood vessel abnormalities are seen.

IMPRESSION:

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 172 of 200
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 172

Saint Louis, Missouri 63110

MIR

MALLINCKRODT
INSTITUTE OF RADIOLOGY
WASHINGTON UNIVERSITY
MEDICAL CENTER

BUCKLEW, RUSSELL
DOB: 05/16/1968
PAT CLASS: Outpatient
MRN: 42602226

This exam was performed at Barnes-Jewish Hospital

1. Extensive deformation of the deep spaces of the midface due to known hemangioma.

2. Slight decrease in size of this hemangioma.

Dictated By: WEI WANG, M.D. on Dec 23 2016 1:25P

This document has been electronically signed by: FRANZ WIPPOLD, M.D. on Dec 23 2016 1:49P

EXHIBIT D

[CDs containing the MRI and CT image files will be sent separately via FedEx First Overnight]

Case 4:14-cv-08000-BP Document 182-1 Filed 04/10/17 Page 174 of 200
CASE NO. 4:14-CV-08000-BP
DEFENDANT'S EXHIBIT 1
PAGE 174

STATE OF MISSOURI
DEPARTMENT OF CORRECTIONS
PRE-EXECUTION SUMMARY OF MEDICAL HISTORY

nder Name: Russell E Bucklew Age: 45 Weight: 168 Height: 5'8

ERGIES: Tonadol, Compazine

t Recent Temp: 98.0 Pulse: 109 Resp: 20 B/P: 142/84 Pulse Oximetry: 99%
l Signs: Date: 5/2/14 Date: 5/2/14 Date: 5/2/14 Date: 5/2/14 Date: 5/2/14

ent Medications: Tramadol, Clonazepam, hydroxyzine, gabapentin, nitidine,

Surgeries: Fracture Right hand + arm, thoracotomy

ical Problems: Gunshot wound to head 1996, Cavernous hemangioma - rig of maxilla (upper jaw) and upper lip present for 20 plus years, Her

Complete the following questions based upon a review of the offender's healthcare and confinement records.		Yes	No	Unknown
as the offender recently had a cold or the flu?	1.		✓	
oes the offender experience shortness of breath with activity?	2.		✓	
oes the offender have Asthma, bronchitis, or any other breathing problems?	3.		✓	
oes the offender wake up at night short of breath?	4.		✓	
as the offender ever had chest pain/heart attack/palpitations?	5.		✓	
oes the offender have a heart condition/high blood pressure history or heart failure?	6.		✓	
oes the offender have Diabetes or Thyroid disease?	7.		✓	
as the offender ever had Hepatitis, Jaundice, or any Liver disease?	8.		✓	
oes the offender have any type of Kidney disease?	9.		✓	
Does the offender have a history of Ulcers, Hiatal Hernia, or Gastric Reflux disease?	10.	✓		
Does the offender have back or neck pain?	11.	✓		
Does the offender have any numbness, weakness, or paralysis in the offender's arms or legs?	12.		✓	
Does the offender have a history of stroke?	13.		✓	
Does the offender have any muscle or nerve disease (Epilepsy or Parkinson's)?	14.		✓	
Has the offender ever had a blood transfusion?	15.			✓
Does the offender smoke? Has the offender ever smoked? Packs/day 2 Years smoked 20 yrs	16.	✓		
Does the offender have a history of IV drug use?	17.		✓	

anation of any YES answers: 11. Complains of pain in jaw area
Acid reflux (medical problems)

pleted By: Delaine Wolfe BSN Date: 5/7/14

June 17, 2

9900038

MISSOURI DEPARTMENT OF CORRECTIONS
PREPARATION AND ADMINISTRATION OF CHEMICALS
FOR LETHAL INJECTION

A. Execution Team Members

The execution team consists of department employees and contracted medical personnel including a physician, nurse, and pharmacist. The execution team also consists of anyone selected by the department director who provides direct support for the administration of lethal chemicals, including individuals who prescribe, compound, prepare, or otherwise supply the chemicals for use in the lethal injection procedure.

B. Preparation of Chemicals

Medical personnel shall prepare the lethal chemicals. The quantities of these chemicals may not be changed without prior approval of the department director. The chemicals shall be prepared and labeled as follows:

1. Syringes 1 and 2: Five (5) grams of pentobarbital (under whatever name it may be available from a manufacturer, distributor or compounding pharmacy), 100 ml of a 50 mg/mL solution, shall be withdrawn and divided into syringes labeled "1" and "2."

2. Syringe 3: 30 cc of saline solution.

3. Syringes 4 and 5: Five (5) additional grams of pentobarbital (under whatever name it may be available from a manufacturer, distributor or compounding pharmacy), 100 ml of a 50 mg/mL solution, shall be withdrawn into syringes labeled "4" and "5."

4. Syringe 6: 30 cc of saline solution. This syringe is prepared in the event that additional flush is required.

C. Intravenous lines

1. Medical personnel shall determine the most appropriate locations for intravenous (IV) lines. Both a primary IV line and a secondary IV line shall be inserted unless the prisoner's physical condition makes it unduly difficult to insert more than one IV. Medical personnel may insert the primary IV line as a peripheral line or as a central venous line (e.g., femoral, jugular, or subclavian) provided they have appropriate training, education, and experience for that procedure. The secondary IV line is a peripheral line.

2. A sufficient quantity of saline solution shall be injected to confirm that the IV lines have been properly inserted and that the lines are not obstructed.

D. Monitoring of Prisoner

1. The gurney shall be positioned so that medical personnel can observe the prisoner's face directly or with the aid of a mirror.

2. Medical personnel shall monitor the prisoner during the execution.

E. Administration of Chemicals

1. Upon order of the department director, the chemicals shall be injected into the prisoner by the execution team members under the observation of medical personnel. The lights in the execution support room shall be maintained at a sufficient level to permit proper administration of the chemicals.

2. The pentobarbital from syringes 1 and 2 shall be injected.

3. The saline solution from syringe 3 shall be injected.

4. Following a sufficient amount of time for death to occur after the injection of syringe 3, medical personnel shall examine the prisoner to determine if death has occurred. If the prisoner is still breathing, the additional five grams of pentobarbital will injected from syringes 4 and 5 followed by the saline from syringe 6.

5. At the completion of the process and after a sufficient time for death to have occurred, medical personnel shall evaluate the prisoner to confirm death. In the event that the appropriate medical personnel cannot confirm that death has occurred, the curtain shall be reopened until an appropriate amount of time has passed to reevaluate the prisoner.

F. Documentation of Chemicals

1. Medical personnel shall properly dispose of unused chemicals.

2. Before leaving ERDCC, all members of the execution team present at the execution shall complete and sign the "Sequence of Chemicals" form thereby verifying that the chemicals were given in the order specified in this protocol.

3. Before leaving ERDCC, one of the medical personnel present at the execution shall complete and sign the "Chemical Log" indicating the quantities of the chemicals used and the quantities of the chemicals discarded during the execution.

4. Within three days of the execution, the ERDCC warden shall submit the Sequence of Chemicals and the Chemical Log to the director of the Division of Adult Institutions (DAI). The DAI division director and the department director shall review the records. If they do not detect any irregularities, they shall approve the two documents. If any irregularities are noted, the DAI division director shall promptly determine whether there were any deviations from this protocol and shall report his findings to the department director.